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Textile World

OCTOBER, 1954

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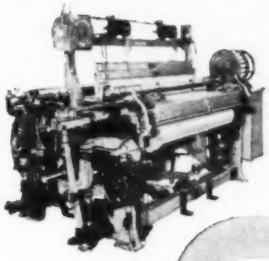
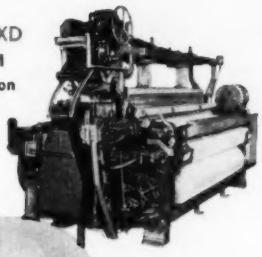


Model X-2

Model XD
with 2X1
Box Motion



NEW

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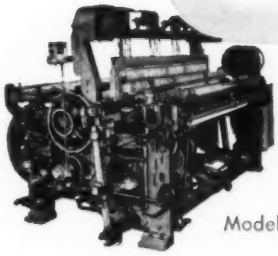
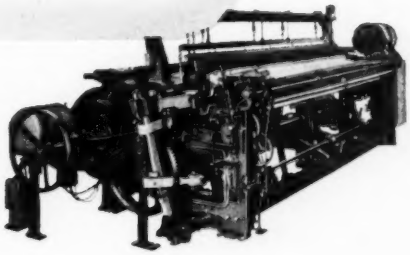
OFFSET

Shrinking Mill Margins



Model XP

Model XL



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Irgalan Brown 3BL
Irgalan Brown 2GL
Irgalan Brown 2RL
Irgalan Dark Brown 5R
Irgalan Brown 7RL
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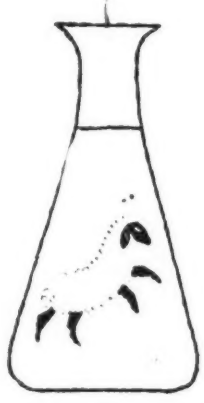

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THE Long-Range VIEW

Important Changes Are Ahead

- **The U. S. is growing by leaps and bounds, and—**
- **The textile industry is heading for undercapacity**

IN A VERY FEW YEARS, maybe as early as 1957 or even next year, a fundamental change will take place in textile-industry conditions. For the first time in the working lifetime of most of us, the industry very likely will stop shrinking and become an expanding industry.

Everybody recognizes that the United States is growing, but only occasionally do mill men stop to take a look at how fast we're growing and where we're likely to be 10 or 15 years from now.

We have on hand two new studies by well-recognized economics-research groups, the McGraw-Hill Economics Dept. and Stanford Research Institute, that show where we are now and are likely to be by 1970 (McGraw-Hill) and 1975 (Stanford). These two groups, working independently of each other, draw pictures a little different in some details but surprisingly similar over all. Here's what they think will happen:

How Much—How Fast?

The two most important long-range factors in any business outlook are (1) how many people there will be and (2) how much money they will have to spend.

Population is expected to reach 200-million by 1970. That will be about 40-million more people, an increase of 25%, in 15 years.

Income after taxes (in constant-value dollars) is expected to rise from about $1,600 per person (not per worker) to about $2,300 by 1970, an increase of about 44%.

How Much for Textiles?

In recent years, one of the most significant changes in the textile picture has been the increased use of textile products by people in middle and low income groups. The net result has been an important increase in total fiber consumption per person in the U. S. population.

There is no reason to suppose that we have reached the peak of this increase. As lower and middle levels of income continue to rise, as there is every reason to expect them to, great masses of people will have more clothes, buy more household furnishings, and use more industrial products that contain textiles. It is entirely reasonable, therefore, to expect fiber consumption per person to continue to increase.

So we have two factors that almost certainly will cause great increases in the use of textile products: (1) the 40-million new people and (2) the fact that the average person will use more textiles. Putting these two things together, we get an expected increase by 1970 of more than the 25% population increase.

There have been many estimates of what the increase is likely to be. The McGraw-Hill study places it at something like 45% between 1950 and 1970. For the sake of separating elements, we might roughly think of this increase as consisting of 25% from population increase and 20% from the greater use per person of textile-mill products.

Is the Industry Ready?

A few leaders in the textile industry are beginning to realize that a serious shortage of production capacity is threatening. With the additional population we now have and the production facilities now in place, we could not again meet defense demands equivalent to those of World War II and maintain anything like a satisfactory level of civilian supply.

In 1925, TEXTILE WORLD's research department estimates, we had 133% more spinning capacity than we needed. Now, we have 7.8%, figured on the basis of running 120 hrs. a week. Looms, according to figures released by the American Cotton Manufacturers' Institute, ran an average of about 116 hrs. a week last year and 115½ hrs. a week the first five months of this year—about 95% of capacity, based on 120 hrs. a week.

To be optimistic and say we now have 10% overcapacity and can keep up with demand by running at 90% of maximum for 120 hrs. a week, it will be five years at the very most before there is no spare capacity left. Just the increase in population will take care of that. Increase in fiber consumption per person will cut the time down.

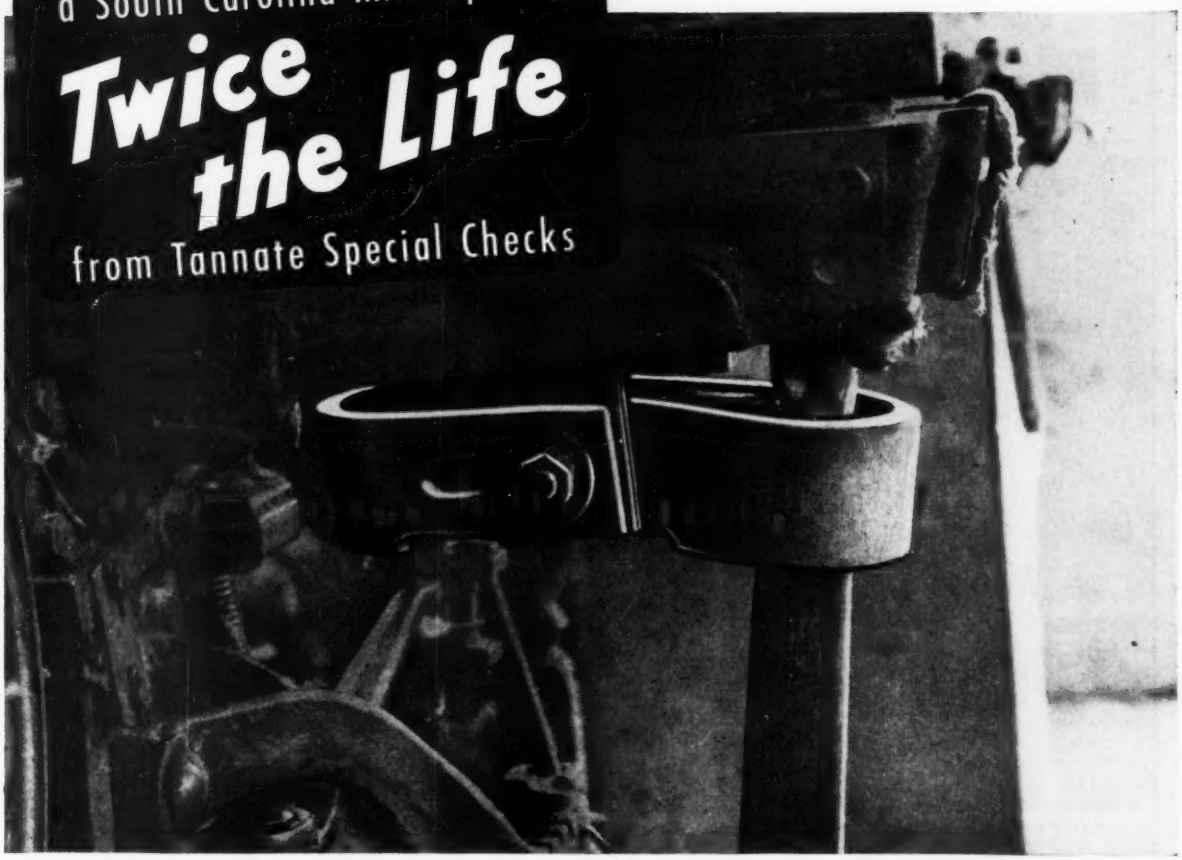
Add it all up and it come out to this: The textile industry must increase its capacity, either by building new mills or by replacing low-production machines.

A. M. Thomas

a South Carolina Mill reports:

Twice the Life

from Tannate Special Checks



Tannate special check straps average 6,000 loom hours, operating at 155 picks per minute, 120 hours per week. Weaving broadcloth on more than 1,000 40" E model Draper looms, this mill reports getting **"more than twice the life from Tannate special checks as compared to those previously used."**

Exclusive design . . . is the reason why so many mills are getting twice the life from Tannate special checks. Rhoads patented design permits BiCut check straps to conform to the angle of the picker stick. As a result, the picker stick strikes the full face width of the strap. More leather hugs the stick to cushion its flight and box the shuttle perfectly.

In addition to more efficient operation, BiCut checks last longer because they wear uniformly from edge to edge and always drop clear of the binder nuts and bolts. What's more, the smooth grain of Tannate special leather is specially treated to give it a satin-like finish that makes a better friction surface. Tannate special leather is cut to meet your requirements in our patented BiCut design, straight or curved, all available in four different weights, three degrees of firmness.

Endless checks also made from Tannate Special Leather are available single or double ply, in two weights. So, no matter what kind of check straps you are using, it will pay you to try Tannate Special Checks. See for yourself why so many mills have consistently reported twice the life with Tannate Special Checks.

what is Tannate® Special Leather?

Tannate special leather is a Rhoads exclusive. It's custom tanned to build into it all the characteristics so necessary for efficient loom operation. For specifications, write J. E. Rhoads and Sons, 35 North Sixth Street, Philadelphia 6, Pa.

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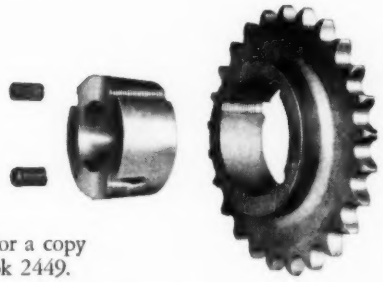
There's no delay for reboring when you need sprockets in a hurry. You can pick these *right off the shelf.* Stocks include sizes for single width chains from RC-40 through RC-160.



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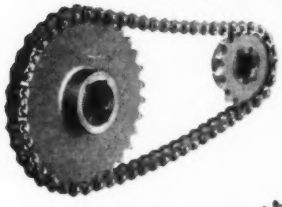
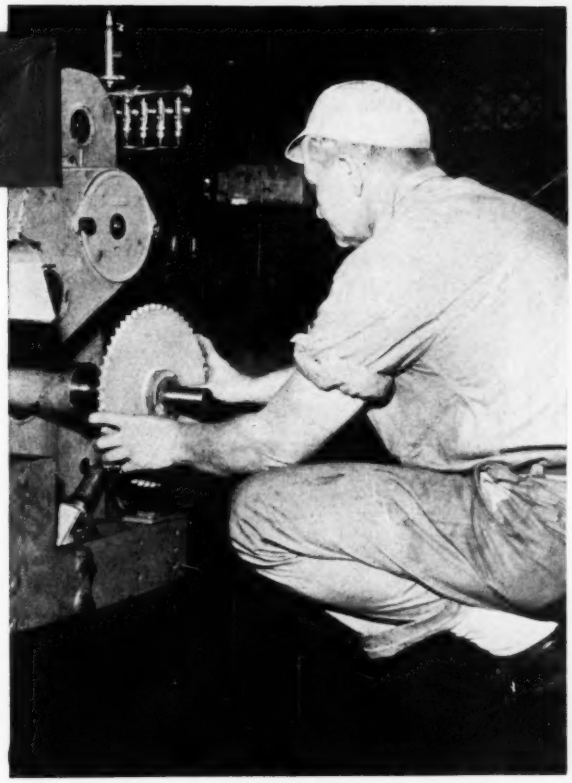
Faster, less expensive installation and removal!

No need to fit sprocket to shaft. Setscrews draw sprocket onto taper bushing, causing bushing to clamp tightly on shaft — equivalent to shrink fit. Turning setscrews in removal-holes quickly releases sprocket from shaft. Full bushing length supports sprocket on shaft.



AN IDEAL COMBINATION: Link-Belt Precision Steel Roller Chain and Link-Belt Sprockets



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13.507

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used by leading mills

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reads regain directly

Today's *Moist-O-Graph* incorporates features which Honeywell has developed following more than 15 years of pioneering experience in this field. Notable among these features are the instrument's direct reading scale and chart . . . the slasher operator doesn't have to interpret, consult tables. He sees on the instrument an indicated and recorded measurement that immediately tells him actual percent regain. And this calibration is made *at the factory* . . . does not require field adjustment. The measuring instrument is an *ElectroniK* recorder, famous throughout industry for accuracy and dependability.

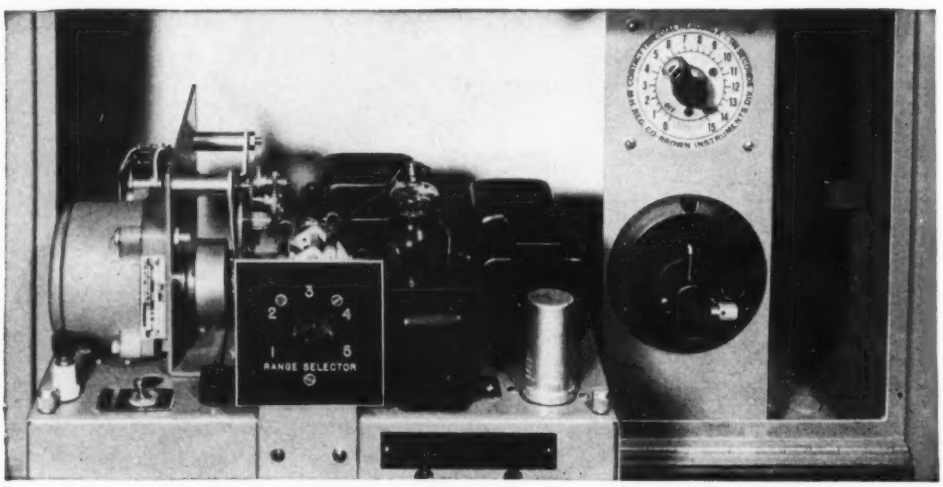
multiple range

When there's a change in the fibre fed to the slasher, or in the size used, all the operator has to do is turn a selector switch to the proper range. The calibration then applies to the new operating conditions. The only other adjustment that the operator has to make is to set the index at the desired regain.

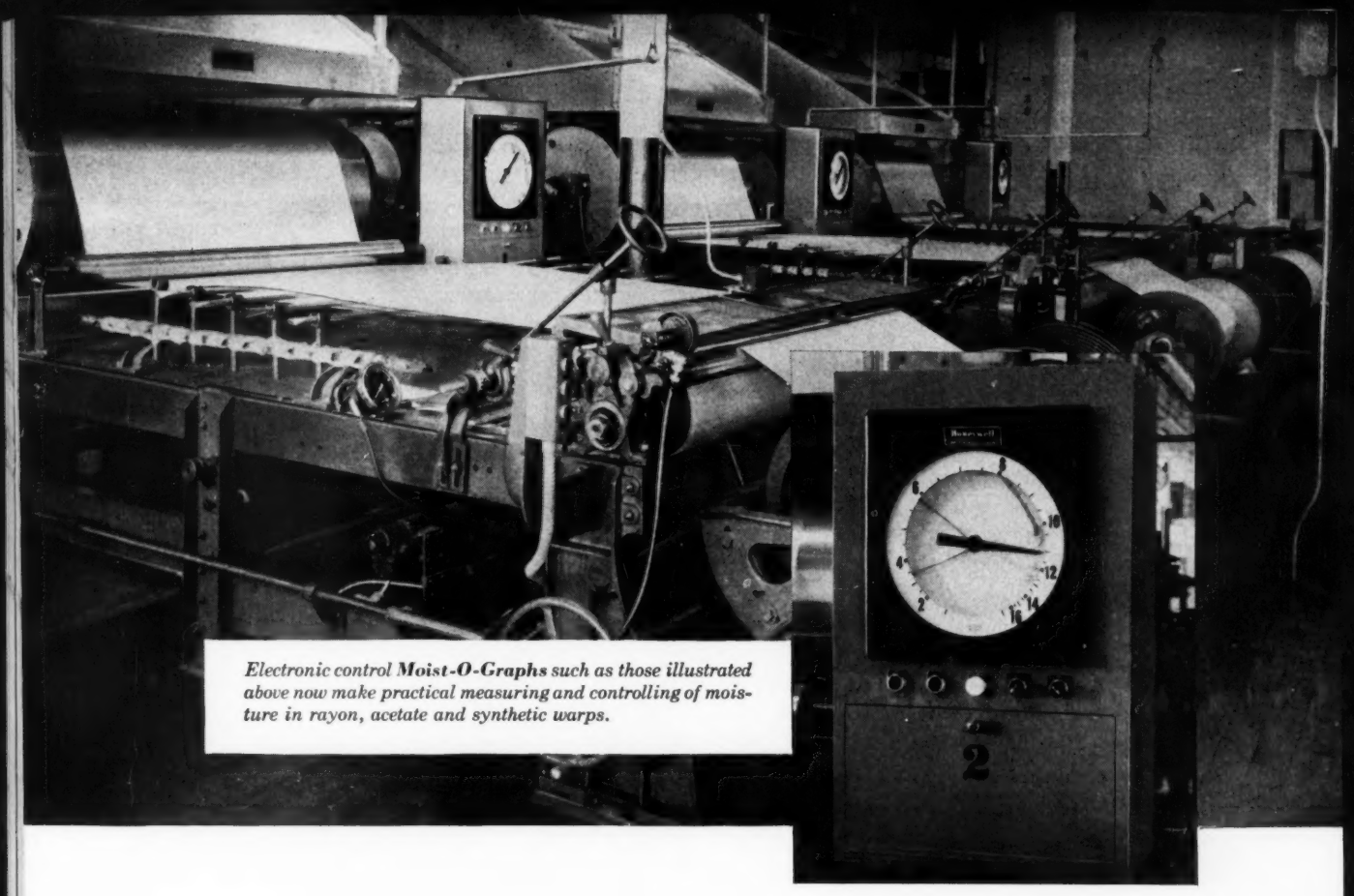
part of complete slasher system

For automatic control of regain, the *Moist-O-Graph* regulates slasher speed to maintain the correct drying rate. The result is that the slasher operates at the maximum speed possible for a given warp. This control is integrated with other Honeywell instruments, which are combined into complete systems for efficient, centralized regulation of the entire slashing process.

Moist-O-Graph®—
of rayon,



A turn of this switch changes the ***Moist-O-Graph*** *calibration to read percent regain directly, for any fibre, blend and/or size.*



Electronic control ***Moist-O-Graphs*** *such as those illustrated above now make practical measuring and controlling of moisture in rayon, acetate and synthetic warps.*

for controlled regain acetate and synthetic yarns

REGARDLESS of the fibre you're processing, you can measure and control warp moisture directly by means of the versatile, electronic multi-range *Moist-O-Graph*.

In leading mills, such as those listed on the opposite page, this instrument is making possible better weaving through more uniform warp, by controlling at uniform moisture . . . providing correct moisture . . . preventing wet warp . . . eliminating overdrying . . . and assuring uniform stretch.

Added to this benefit of better weaving is the attendant increase in slasher room production, made possible by the fact that the *Moist-O-Graph:*

- *prevents overdrying of yarn, resulting in fewer stoppages*
- *makes possible higher running speed*
- *provides operation records*

Our local Honeywell engineering representative will be glad to give you full details on how this instrument can help improve slasher efficiency in your mill. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa. Sales and service offices in more than 110 principal cities of the United States.

● **REFERENCE DATA: Write for new Bulletin No. 54-66.**

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

When the question is

AIR CONDITIONING

what's the best answer for you?

Amco can offer you a choice of four different systems, alone or in combination: humidification, ductless evaporative cooling, unit dry-duct, or central station air conditioning. Whatever your particular requirements may be, Amco engineers will give you unbiased advice on the air conditioning system best suited to your needs.

The facts about textile mill air conditioning — the advantages and disadvantages of each type of system — are completely covered in Amco's new booklet — "Air Conditioning for the Textile Industry".

- . . . *what factors favor a central station system?*
- . . . *what is meant by a "split" central station system?*
- . . . *when is a dry-duct system advantageous?*
- . . . *what factors favor ductless evaporative cooling?*

These and other questions are answered and explained in this booklet. If you are one of the management group interested in air conditioning, write for your copy — or better still, ask an Amco engineer to call.

AMCO

AIR CONDITIONING SYSTEMS since 1888

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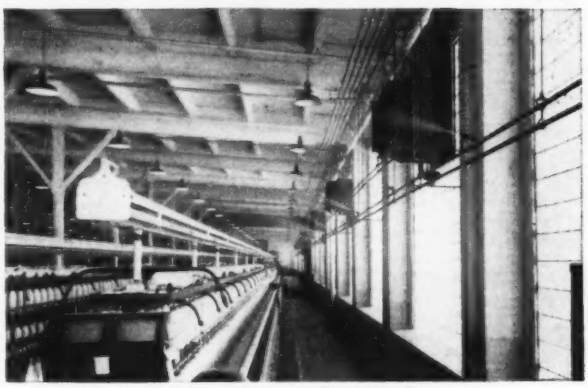
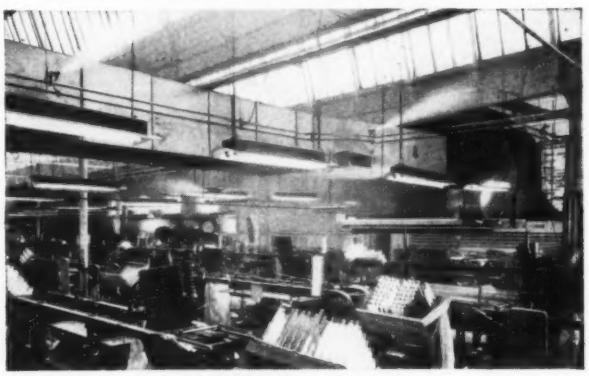
AFFILIATED WITH GRINNELL COMPANY, INC.

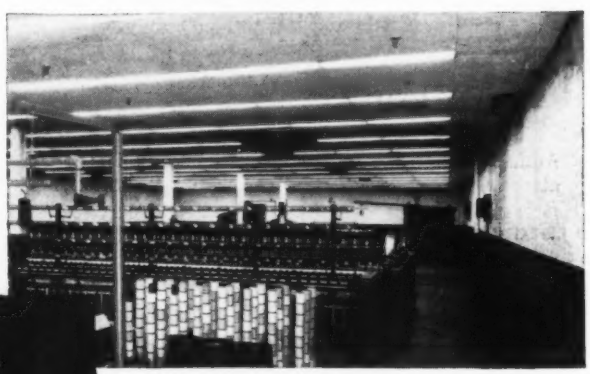
Humidification



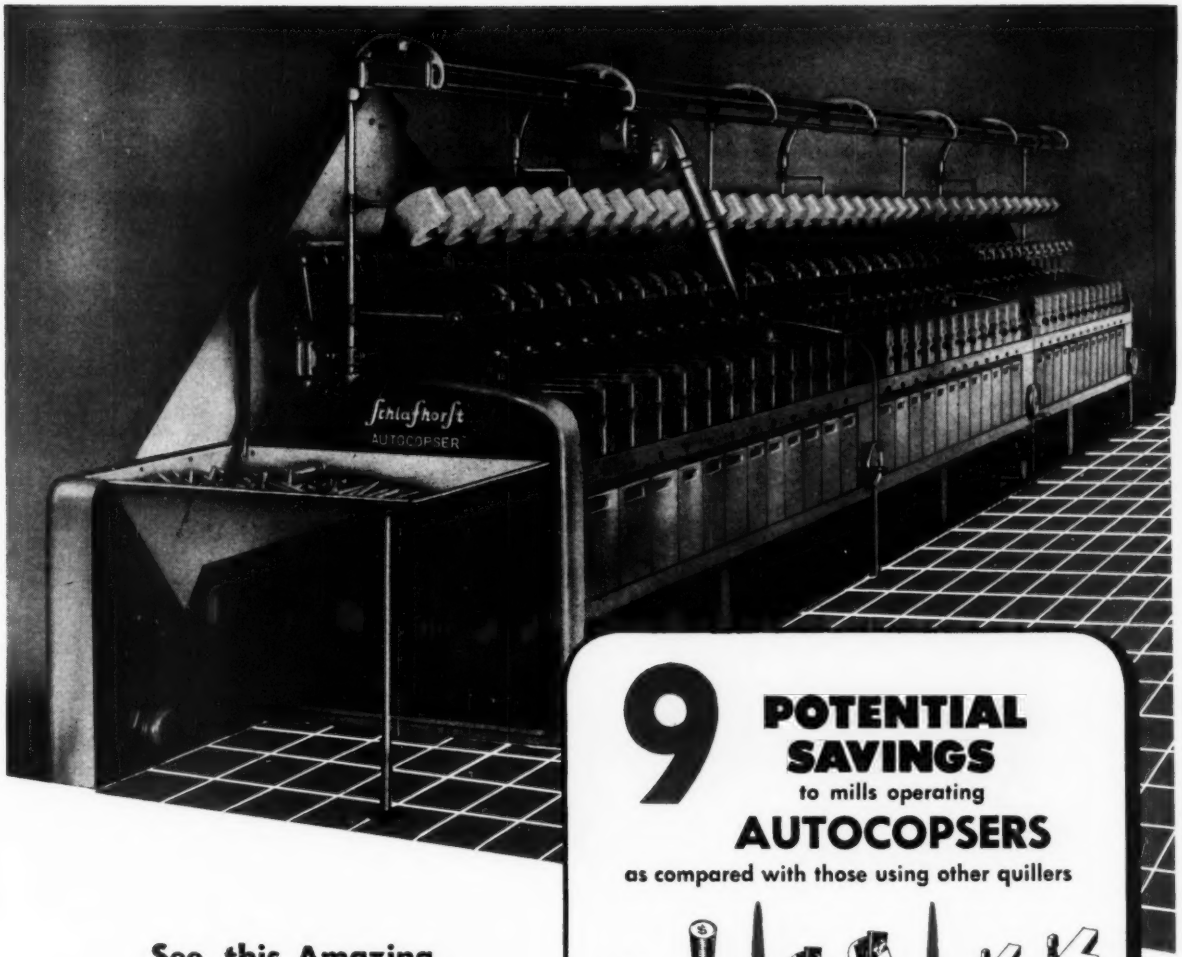
Ductless Evaporative Cooling



Unit Dry-Duct System



Central Station System



See this Amazing Machine in Operation

AT THE SOUTHERN TEXTILE EXPOSITION

BOOTH 427X

9 POTENTIAL SAVINGS

to mills operating

AUTOCOPSERS

as compared with those using other quillers

Schlafhorst

AUTOCOPSER

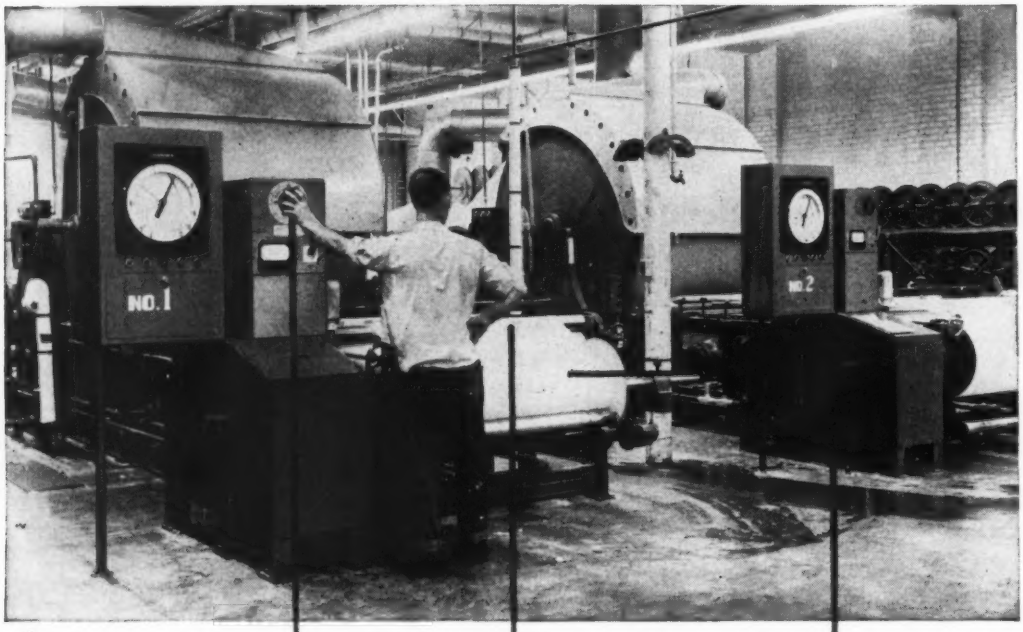
First Name in Automatic Quillers the World Over.

MANUFACTURED BY W. SCHLAFHORST & CO., M. GLADBACH, WEST GERMANY
EXCLUSIVE U. S. REPRESENTATIVES: THE TERRELL MACHINE CO., INC., CHARLOTTE, N. C.

C&K's New Multi-Purpose Looms

ONLY RELIANCE V★S DRIVE ...THE ORIGINAL PACKAGED MULTI-MOTOR SLASHER DRIVE

✔ OFFERS THESE FEATURES AT HEAD END...



✔Simple Convenient Control

✔Constant Winding Tension

✔More Yarn On The Beam

No. 8843

...plus all of these advantages

- Wide Speed Range—Including Slow, Stable Creep Speed
- Regulated Stalled Tension
- Smooth Electronic Acceleration and Deceleration—Independent Rates, Easily Adjustable
- Increased Production on All Types of Slashers
- More Effective Control for Any Yarn or Set D-1477

For complete information write for Bulletin D-2326.

RELIANCE ELECTRIC AND ENGINEERING CO.

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C&K's New Multi-Purpose Looms

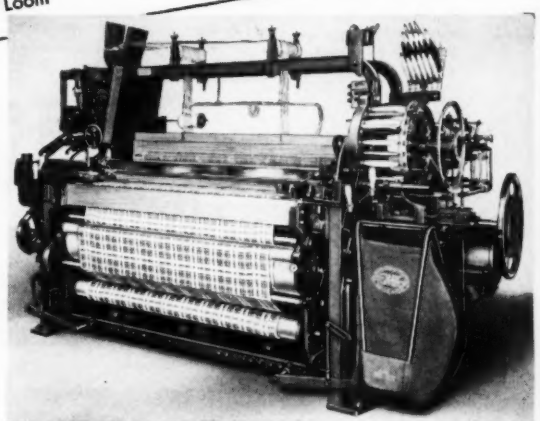
give you Not One—but Many Points of Improvement in Loom Design

... *which mean More Profit for any mill*

THESE NEW M-P FEATURES CONTRIBUTE→TO THESE PROFIT FACTORS

	Better Quality	Increased Work Assignments	Increased Production (Speed X Efficiency)	Lower Maintenance	Versatility
Rotary Magazine: For single color, or for multiple-color work (up to 4).	✓	✓	✓	✓	✓
Scissors Thread Cutter	✓	✓	✓	✓	✓
Vacuum Filling Control	✓	✓	✓		✓
Cone Picking		✓	✓	✓	
More Rugged Basic Frame: Common to all M-P Looms.		✓	✓	✓	✓
Letoffs: New composite type. Also other standard and special types.	✓	✓		✓	✓
Takeups: All purpose, silk, or lower winding roll.	✓				✓
Lay: Precision-built and convertible — 1x1, 2x1, 4x1, 4x2, and 4x4	✓	✓	✓	✓	✓
Shedding Mechanisms: Knowles Head — 25 Harness, 4/10" Space Knowles Head — 20 Harness, 1/2" Space Dobby — 20 Harness, 15/32" Gauge Undercam Jacquard	✓	✓	✓	✓	✓
Feelers: As required.	✓	✓	✓	✓	
Driving & Shipping	✓	✓	✓	✓	

PRECISION, STRENGTH, SIMPLICITY Throughout Every M-P Loom



Here is your check list showing new **M-P** features contributing to the five profit-factors which are the basic objectives of every mill.

And here also, at the right, is the new **M-P** Filament Loom . the *first* completely automatic 4x1 loom for filament constructions, and many other fabrics in favor today. For full details on this and other new **M-P** Looms, *see C&K without delay* (and watch this page, from now on.)

CROMPTON & KNOWLES Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.

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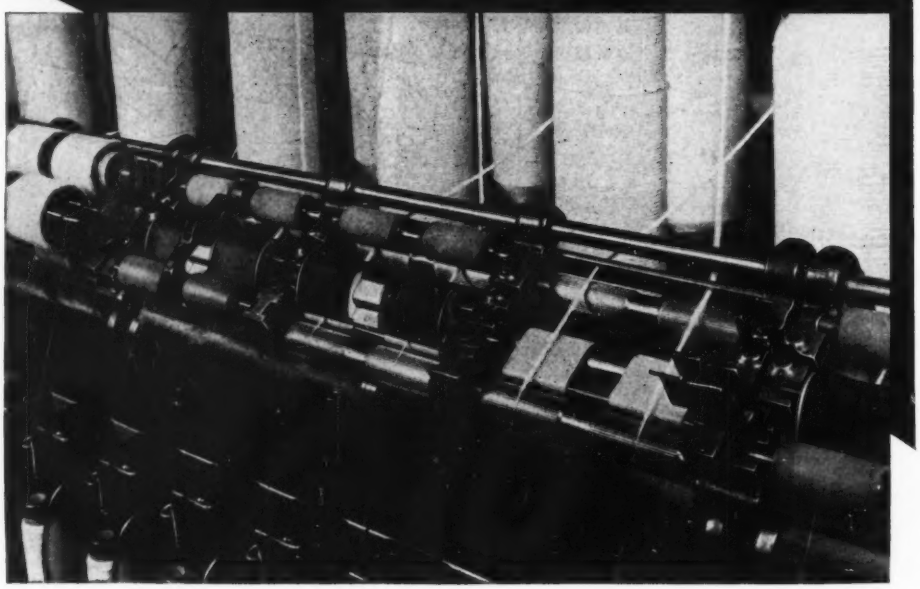
SACO-LOWELL Duo-Roth—

A DRAFTING SYSTEM COMBINING ALL THE QUALITY BUILDING AND COST SAVING ADVANTAGES OF THE SINGLE AND DOUBLE BELT SYSTEMS.

1. The long, thin, flexible bottom apron passes the nose of the apron bar with a small radius of curvature in a manner which allows a close setting between the nip of the aprons and nip of the front roll, a condition necessary for the most efficient fiber control in the final drafting zone.

2. Without exception, mills using the Duo-Roth System have increased their drafts as much as 50 to 100 per cent, and at the same time have produced a yarn of greater strength and evenness.

3. The greater strength and evenness is vividly shown in a Duo-Roth installation producing 21's yarn from .75 hank single roving, employing a 4.52 twist multiple—the break factor secured is 2339. Previously, the same frames running regular drafting were producing 21's yarn from 1.50 hank single. With same twist multiple highest break factor obtainable was 2104.



4. Duo-Roth is cleaner; there is a reduction in clearer waste as the shorter fibres are efficiently controlled. After raising the draft from 19 on Roth to 33 on the Duo-Roth, one mill was able to extend the top roll cleaning period from 24 hours to 48 hours, on a three-shift basis. Another mill, with a 50 per cent increase in draft after changing to Duo-Roth, also extended the top roll cleaning period from 24 hours to 48 hours.

5. Duo-Roth was engineered to be a simple, quickly applied change-over to existing Roth installations. Mills having Roth frames in good condition will find that Duo-Roth will pay for itself in savings resulting from increased draft, reduced cleaning, improved operating conditions and smoother, stronger yarns.

6. Duo-Roth is the only double-apron drafting system which does not develop wear of the cage against the apron driving roll. The standard Duo-Roth middle top roll, driving the apron, is built with a stationary arbor. The cage rests against the stationary arbor, eliminating the possibility of cage wear — a common problem with other systems.

7. The knurled and polished surface of the Saco-Lowell Duo-Roth middle top roll creates a positive and uniform drive for the aprons. Since both of the driving bosses are tied together, there is no variation in the speed of the top roll aprons regardless of the bulk of the strand being drafted. There is no slip or hesitation to create unfavorable conditions in the principal drafting zone.

8. The Duo-Roth, with the adjustable cage is extremely flexible. The correct pressure to establish the necessary degree of fibre control for the most efficient drafting can be quickly attained through easy adjustments.

A BROCHURE FULLY DESCRIBING SACO-LOWELL DUO-ROTH IS AVAILABLE ON REQUEST. SACO-LOWELL ENGINEERS WILL ALSO BE GLAD TO ARRANGE A DEMONSTRATION.

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"EXHIBIT A"

For Textile Machinery

New Departure offers the latest in **ball** bearings for textile machinery, including the newest Self-Sealed bearings. Designed for today's higher speeds . . . greater loads . . . increased production demands . . . New Departure textile bearings require little or no attention for years at a time!

Since introducing the first self-sealed **ball** bearing 27 years ago, New Departure has developed and tested more **ball** bearing seals and lubricants than any other manufacturer.

Talk to New Departure about the latest textile bearings. New Departure's engineering staff is always at your service!

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Plants also in Meriden, Connecticut, and Sandusky, Ohio
In Canada: McKinnon Industries, Ltd., St. Catharines, Ontario

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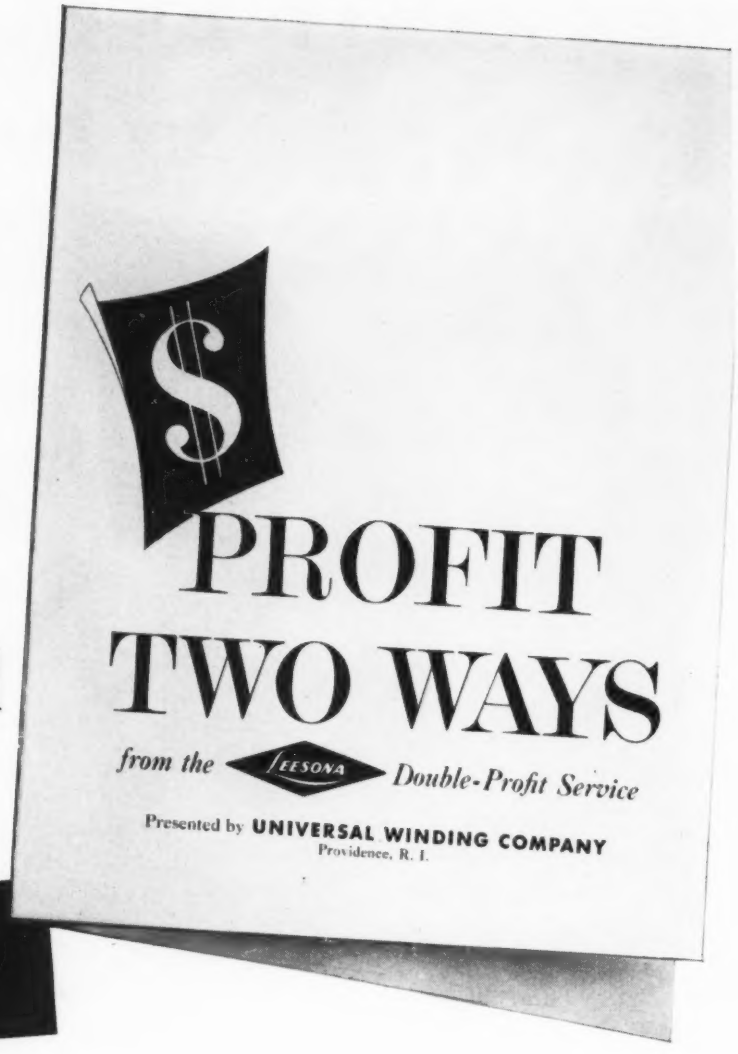
This folder tells you

two ways to boost textile mill profits



Send for it!

Universal's new folder describes the Leesona Double-Profit Service, which tackles the problem of how to increase textile mill profits — tackles it squarely from entirely different angles and comes up with two of the most progressive, most sensible measures ever offered. These are:

I. THE LEESONA PROFIT FACTOR STUDY

A detailed, absolutely confidential, economic study of your twisting and winding operations. It covers all factors in the operations being analyzed, and all interrelated operations. You get a complete analysis with recommendations — an unusual service performed by Universal that is without any obligation whatever on your part.

II. THE LEESONA PAY-AS-YOU-PROFIT PLANS

Two plans for the purchase or lease of modern, cost-cutting twisting and winding machinery:

1. The Leesona Long-Term Purchase Plan
2. The Leesona Long-Term Lease Plan

Advantages of these plans include immediate opportunities for economy and/or expansion, protection for your cash position, and simplified financing.

The folder tells how these progressive measures may be used separately, or to supplement each other. Send for your copy today — get the facts that have already aided many mills to step up their production and profits!

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- STEPLESSLY VARIABLE NAPPING EFFECT AUTOMATICALLY CONTROLLED ON SPEED CHANGE
- SUPERIOR NAPPING EFFECT
- FEWER CLOTH RUNS NECESSARY
- ELECTRO-MAGNETIC INSTANT BRAKE

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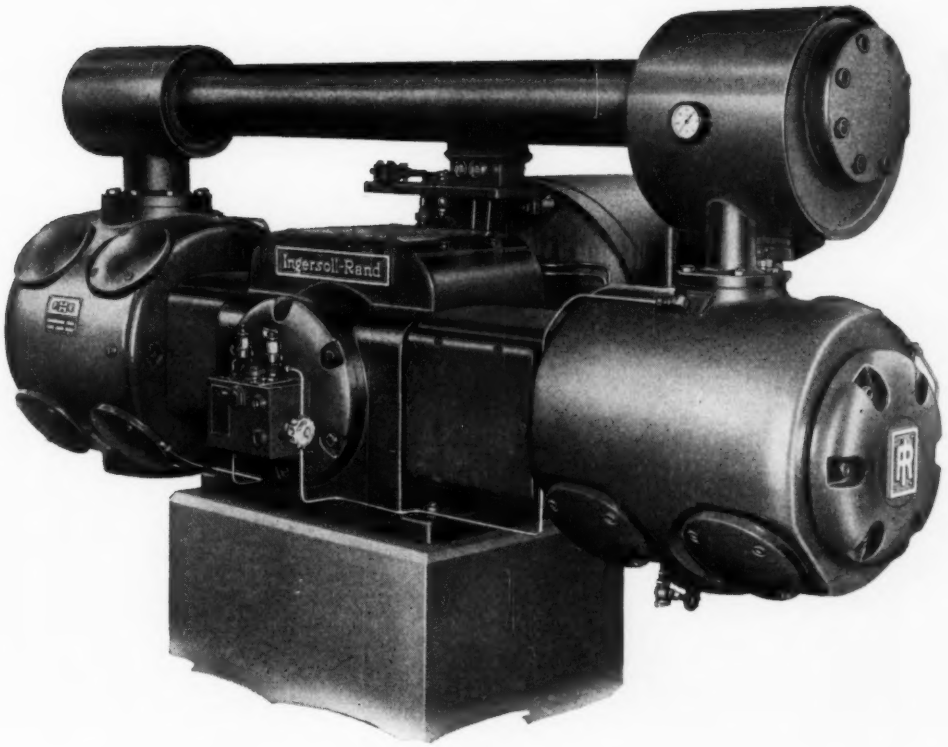
NEW

OPPOSED-CYLINDER

BALANCED DESIGN, TYPE PHE

COMPRESSOR



COMPACT, SPACE-SAVING PACKAGED DESIGN

The new, space-saving PHE design marks another Ingersoll-Rand achievement in electric-driven compressors. Built for continuous, heavy-duty service, it includes the following outstanding features: Opposed pistons with excellent running balance – Efficient tube-type intercooler—New cylinders with Type A Channel Valves—Motor mounted directly on crankshaft—Full floating aluminum main and crank-pin bearings – Sealed crankcase – Force-feed lubrication.

FOR EASY SHIPMENT, INSTALLATION & RELOCATION

Shipped completely assembled and ready to run, the PHE compressor can be easily installed—in very little floor space—with a minimum of piping—and on a simple inexpensive foundation. Relocation, if required, is equally simple.

ELECTRIC-DRIVEN 75 AND 100 HP SIZES

The basic design is a two-stage unit for 80-125 psi. For other pressures, or for pumping vacuums, alternate cylinder arrangements can be supplied. It will pay you to get all the facts on this new, cost-saving design. Ask for Bulletin No. 3155.

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COMPRESSORS • AIR TOOLS • ROCK DRILLS • TURBO BLOWERS • CONDENSERS • CENTRIFUGAL PUMPS • DIESEL AND GAS ENGINES

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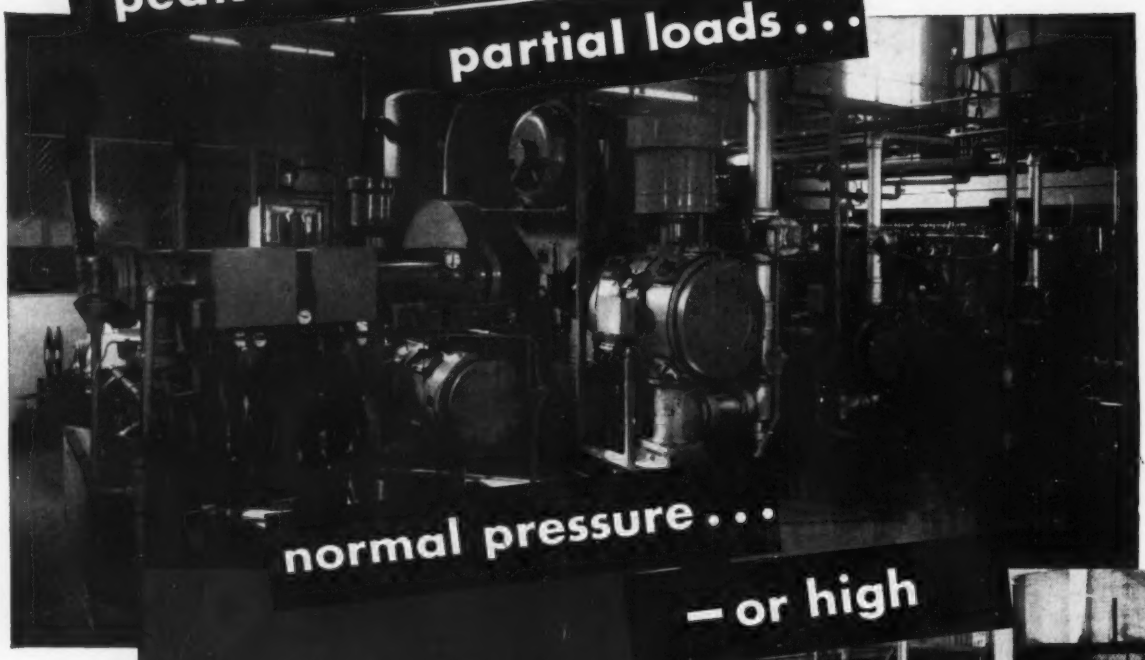
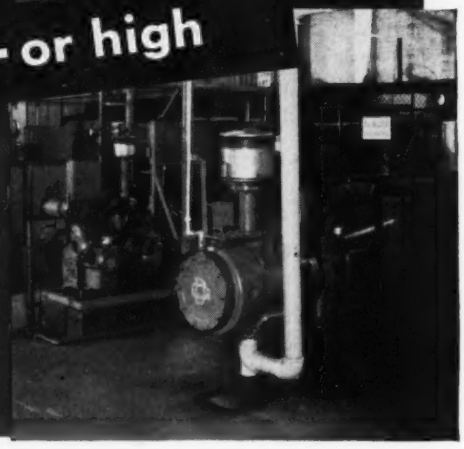
partial loads . . .



normal pressure . . .

— or high

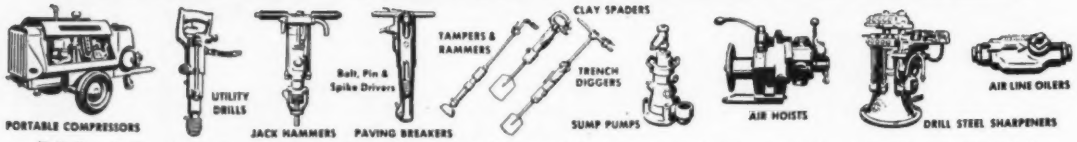


a GARDNER-DENVER COMPRESSOR for every need!

. . . this Chicago manufacturer meets *all* compressed air needs with this efficient installation of *seven* Gardner-Denver Compressors.

SINCE 1859

GARDNER-DENVER



THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

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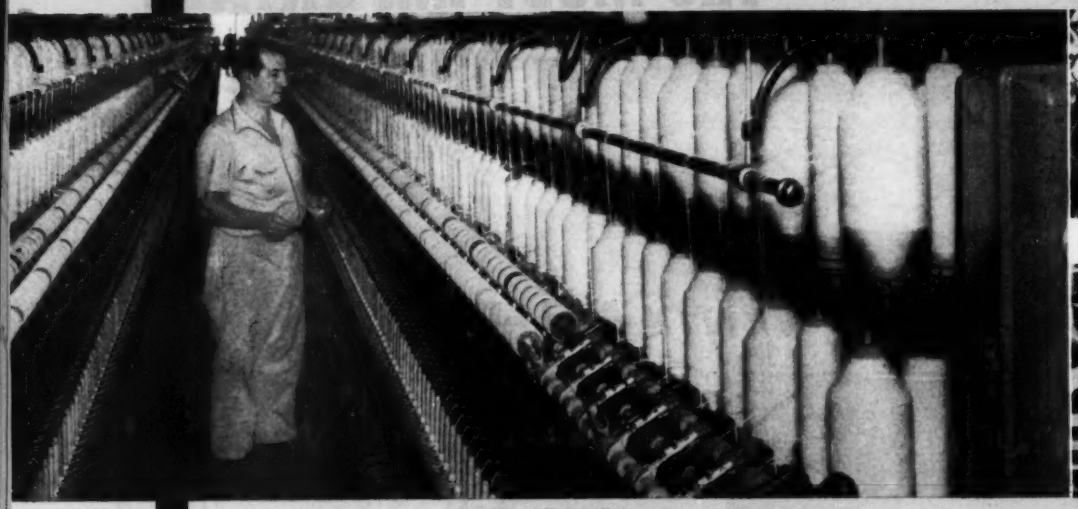
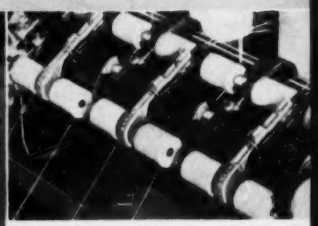
. . . This New

DIXON SADDLE GUIDE

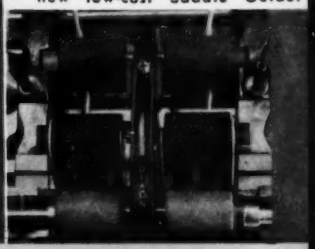
Modernizes Your Drafting at lowest cost



Typical Mill Installation



Casablanca Spinning with Dixon's new low-cost Saddle Guide.



Duo-Roth Spinning with Dixon new Guide; also available for Roth

...Simple Design Eliminates Oiling, Allows Piecing Up Side to Side

Dixon Corporation, makers of saddles and related parts since 1876, have tested and proved the new Dixon Saddle Guide in actual mill operation. To modernize any standard frame, just snap this new equipment into place — with no changes or adjustments except to throw away your front cap bars. We combine all benefits of up-to-date weighting and guiding top rolls, at costs to you as low as 70c per spindle. Compare these advantages:

1. Ball bearing anti-friction front roll for less drag, less power loss.
2. Automatically self-aligning cap bar-less front roll with ball-and-socket pivotal mounting ensures positive alignment and perfect yarn.
3. No lubrication on any top rolls any time under any service conditions — reducing cleaning and occurrence of dirty yarn.
4. Removable and replaceable Rulon bearings on back roll and back saddles, with guaranteed greater resistance to wear and lower friction than any other plastic bearings — meaning up to 33% less power consumption.
5. Elimination of front cap bars, with costly wear and replacement requirement, allows for easy "end-around" piecing up.
6. No revolving end gudgeons on any top roll — means no yarn wrapping and practically no picking.
7. Guaranteed freedom from oiling means cleaner yarn, less spoilage, lower costs.
8. Inner race revolving front roll means ball bearings travel less distance, with resultant double life and lower maintenance.
9. No additions or changes for installation means less expense, no time lost when changing over.
10. Extremely low initial cost — from 70c, never more than $2.45 per spindle, depending on requirements — means immediate return of full investment, less outlay involved.

Nearly a century of practical experience enables us to perfect a product of simple design at low cost. We keep the best of traditional elements, incorporate the most desirable new features — avoiding complexities that cause excessive cost. Get the facts from your Dixon representative. Order now for your new change-overs, with assurance that new Dixon Saddle Guides amortize their cost within weeks.

Send for this full description of new Dixon Saddle Guide

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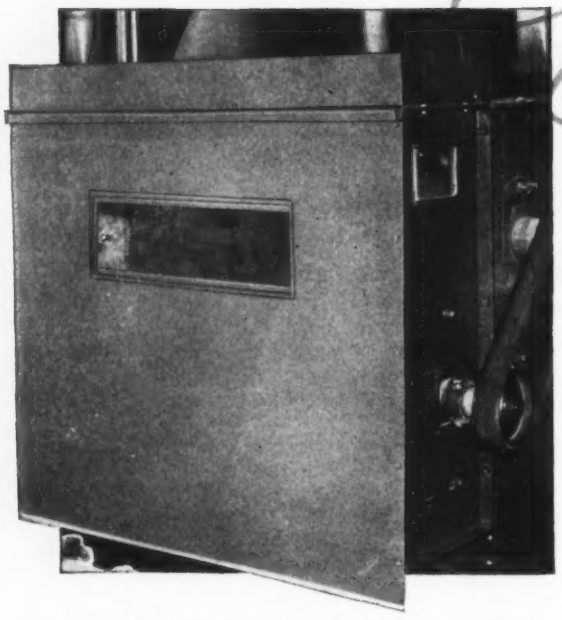
The MOST IMPORTANT in OPENING and in 20

The New WHITIN AXI-FEED . . . *and the*



The AXI-FEED unit is a relatively small unit, easily and quickly fitted to the delivery end of a Whitin or standard blending feeder. A dual purpose machine, it opens the stock into small tufts, at the same time removing a much higher percentage of waste than was formerly possible at this stage of the opening process. The major elements in the AXI-FEED are: (1) 18" spiked cylinder, (2) specially designed adjustable grid bar and stock flow arrangement, (3) dust extracting hood. Production is up to 220 lbs. per hour.

To remove the ever-increasing amount of trash and dirt which is now found in cotton, and which now requires many types of machines that are expensive to operate and maintain, Whitin now offers two entirely new machines. The AXI-FEED and the AXI-FLO operate on a new principle which eliminates beating, and are so superior in cleaning efficiency, so simple and inexpensive to install and operate, so gentle in the treatment of cotton, that they introduce an entirely new era in the opening and cleaning process in all cotton mills spinning any count from any stock.

. . . ADVANTAGES

- No more floor space is required. Without moving the blending feeder or the feed table, the AXI-FEED is easily attached to the delivery end and of the blending feeder.
- The AXI-FEED is driven by a belt from the doffer shaft of the blending feeder. Therefore, no additional motor is needed.
- A considerable amount of dust and waste is extracted.
- It is less costly and far easier to install than any other device now available.

An adequate idea of the tremendous value of this equipment to your mill can be gained only by learning *all* the facts. Write today for complete details to Dept. G, Whitin Machine Works, Whitinsville, Mass.

CHARLOTTE, N. C.

ADVANCE CLEANING YEARS...

The AXI-FLO is a machine operating on a new principle and is placed in the opening line immediately after the mixing feed table. Most efficient production rate is 600-800 lbs. per hour and total capacity is 1200 lbs. per hour. The machine utilizes two spiked 18" cylinders rotating at 400 R. P. M., specially designed adjustable grid bars, adjustable guides for directing the flow of stock, and two dead air chambers for waste reception. The cotton is cleaned by the buffeting and agitating action effected by the spiked cylinders and grid bars. No feed rolls or beaters are employed.

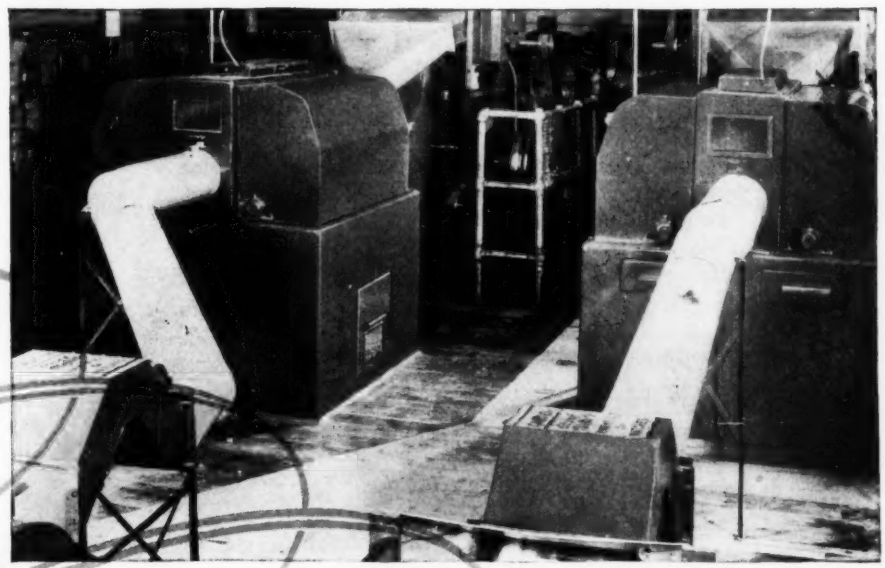
Thoroughly tested in mill operation, the AXI-FEED and AXI-FLO have proved their ability not only to remove far more waste than any other conventional machine, but to remove less spinnable fiber, to minimize long fiber breakage, to avoid curling and rolling of the stock, and to extract leaf waste without pulverization.

New WHITIN AXI-FLO

Waste removed by **AXI-FLO**

Middling Cotton	1.1 — 1.7 percent
Low Middling Cotton	1.5 — 3.0 percent

Mill installation of 2 AXI-FLO units



ADVANTAGES...

- Low Investment
- Higher cleaning efficiency than available on any conventional machinery
- Less neps
- Less long fibers removed
- Greatly reduced power consumption — in some instances up to 75%
- Less floor space required
- Minimum maintenance
- Supplemental blending
- Stock is not compressed by feed rolls or condensed until after it has been cleaned and exhausted from the AXI-FLO.
- Less damage to stock
- Fewer long fibers broken means increase in effective fiber length.
- Better quality stock in laps
- Improved yarn breaking strength from same quality cotton.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

• ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

For more information, write direct or use Reader Service post card.

There's a

NOPCO® TEXTILE CHEMICAL

to save you time and trouble

on **EVERY FIBER** *and* **FABRIC**

Nopco-developed processing chemicals are "lending a good right hand" to manufacturers throughout the textile industry. Whether they are treating natural fibers, synthetics, or both, users of Nopco's scientifically prepared chemical aids and assistants are daily realizing new economies in processing.

Typical Examples of Nopco Textile Chemicals are:

- **NOPCOSTAT* SERIES** . . . a complete range of processing and finishing aids for all types of fibers. *Contain maximum antistatic control.*
- **NOPCOWET* LINE** . . . a series of exceptionally effective wetting and rewetting agents. *Applicable in strong and mild acid, alkaline, and neutral solutions.*
- **NOPCONE* OILS** . . . an extensive group of coning products built to produce optimum cone qualities in coning and winding operations. *For all yarns.*
- **NOPCOTEX* SOFTENERS** . . . a broad line of high quality softening compounds. *For all types of fibers and fabrics.*
- **NOPCOSIZE* SERIES** . . . sizing solutions that permit high loom speeds with minimum shedding. *For all types of natural and synthetic fibers.*

More than 150 Nopco processing chemicals are busy helping to improve the quality of textiles, reduce waste, lower production costs. We'll gladly supply information—and make recommendations based upon your particular needs.

*TRADEMARK

NOPCO
CHEMICAL COMPANY Harrison, New Jersey
PLANTS: Cedartown, Ga. • Richmond, Calif. • London, Ont., Canada

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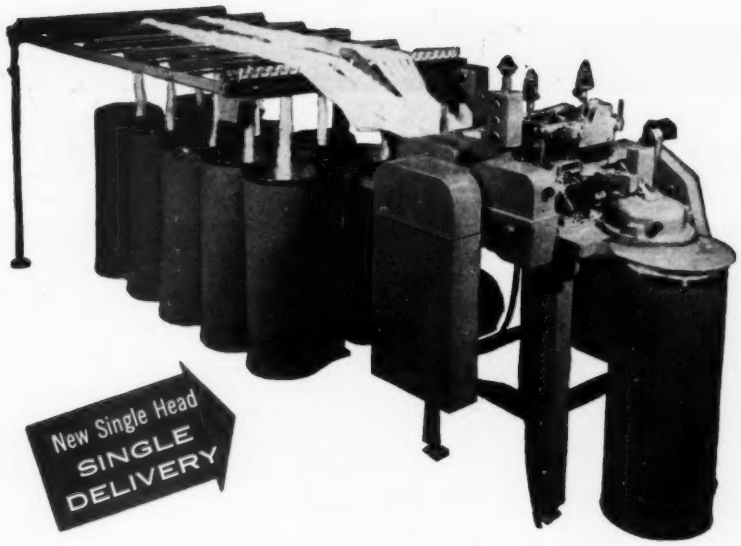
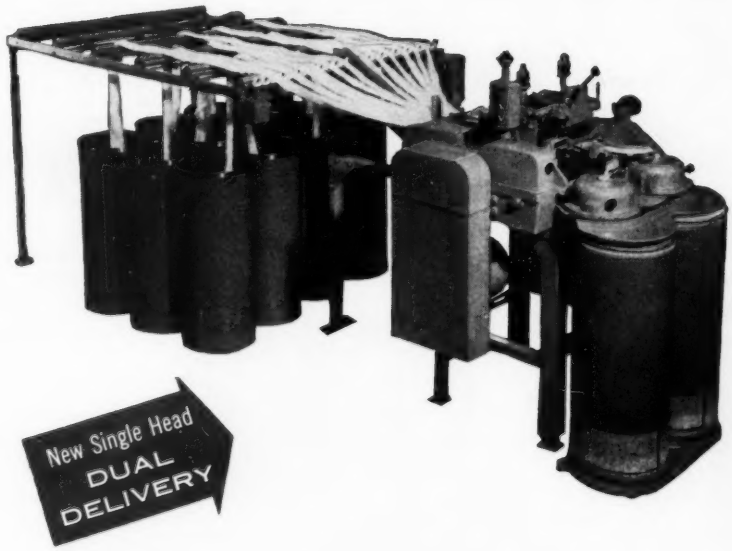


Yes, these new, redesigned Pin Drafters give you all the previous advantages of the Pin Drafter System, *plus* many new production advantages in the first and second operations. Combined with their lower initial cost, it all adds up to higher production per dollar for you!

HIGHER PRODUCTION PER DOLLAR

with *new* Warner & Swasey Pin Drafters®



Take a look at these improvements:

- **Capacity increased 25% with new 6" faller bars!**
  From 4" effective pinning to 5".
- **25% faster!**
- **50% higher production!**
- **Better balanced production!**
- **Easier operation!**
- **Less maintenance!**
  Simplified design, sealed bearings.
- **Larger capacity creel!**

But get the complete facts about these new Warner & Swasey Pin Drafters. Call in our nearest Field Representative today!

SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
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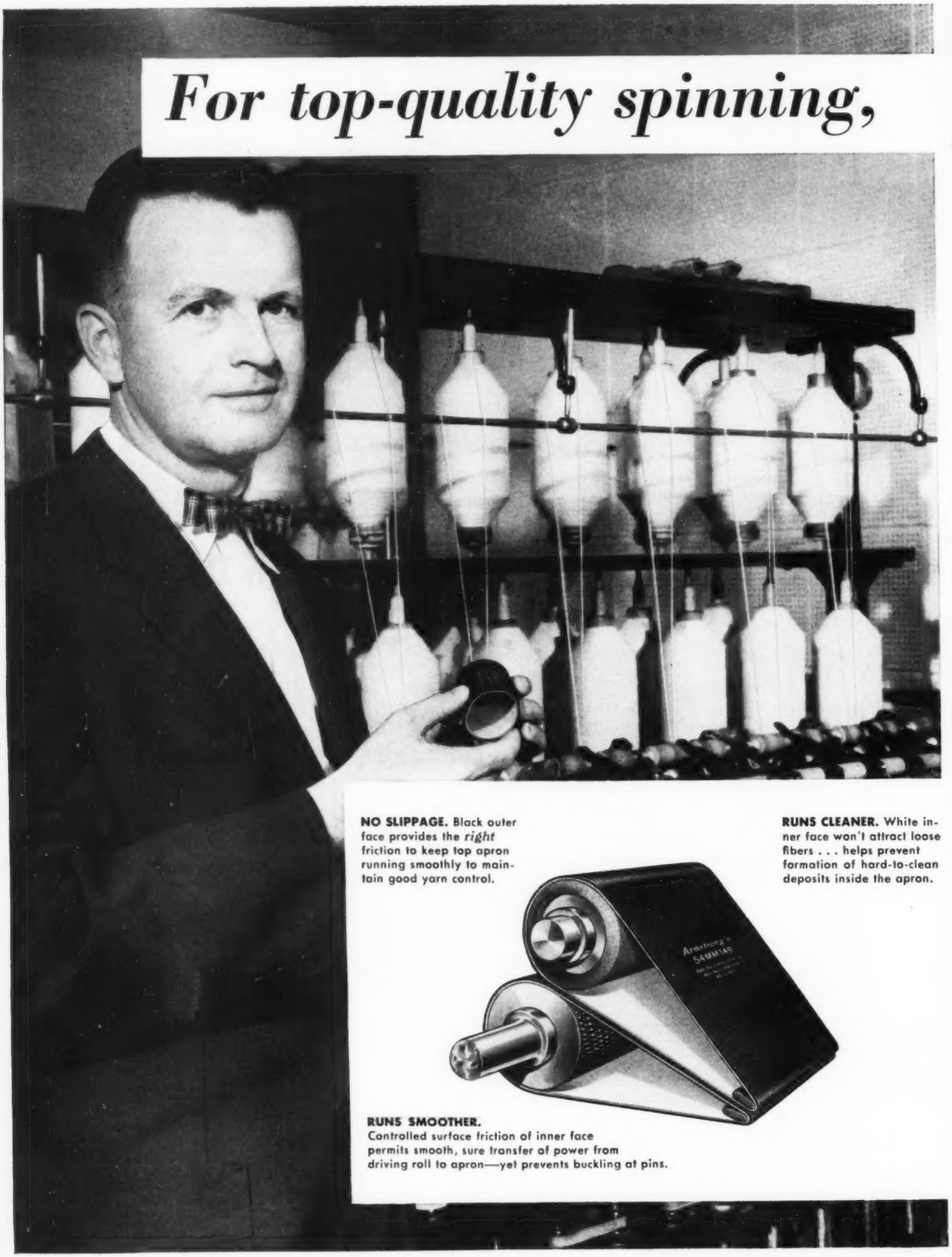
WARNER & SWASEY
TEXTILE MACHINERY DIVISION

® *Reg. U.S. Pat. Off.*

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

For top-quality spinning,



NO SLIPPAGE. Black outer face provides the *right* friction to keep top apron running smoothly to maintain good yarn control.

RUNS CLEANER. White inner face won't attract loose fibers . . . helps prevent formation of hard-to-clean deposits inside the apron.

RUNS SMOOTHER.
Controlled surface friction of inner face permits smooth, sure transfer of power from driving roll to apron—yet prevents buckling at pins.

use the apron with two special rubber compounds —

ARMSTRONG'S NO-7075 runs clean and smooth, eliminates top apron slippage on all types of double-apron frames.

Among mill men, the switch is to Armstrong's NO-7075 Accotex® Apron—and for good reason. This superior black-and-white apron is setting new standards for top-quality yarn in many mills. The reason for this lies in the high quality of the two different rubber compounds which are used in NO-7075 Aprons.

On long-draft double-apron equipment, the inner and outer apron surfaces have different functions that require nearly opposite characteristics in the rubber compound. Armstrong's NO-7075 Aprons were developed specifically to meet this need.

The inside of NO-7075 Aprons is a white compound. It has just enough friction to assure even transfer of power from drive roll to apron; yet it is smooth enough to slip over the pin without jamming or buckling.

This white inner surface runs exceptionally clean, too. A special electrolyte added to the white compound tends to repel loose fibers—helps prevent formation of hard-to-clean deposits inside the apron.

NO-7075's black outer surface is compounded so that it has much more friction than the inner surface in order to keep the top apron spinning smoothly without slipping. This black compound also has long flex life and high resistance to abrasion.

A test in your own mill will prove how well NO-7075 Aprons run on any type of double-apron frames. Ask your Armstrong man for samples—or write Armstrong Cork Co., 6410 Dauphin St., Lancaster, Pa.

MEET EVERY NEED FOR TOP-QUALITY APRONS

FOR DOUBLE-APRON FRAMES. Double-faced NO-7075 gives you smooth operation on all types of double-apron equipment.

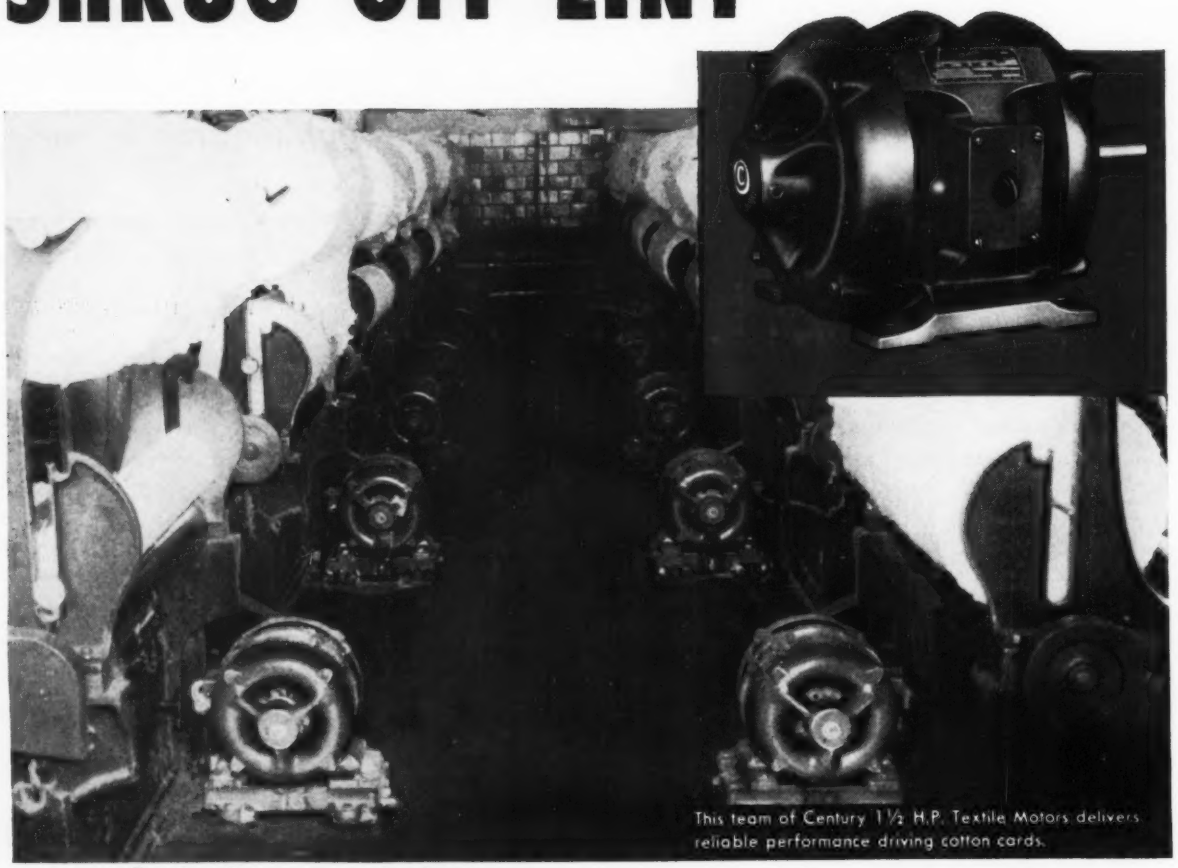
FOR SINGLE-APRON SPINNING. Super-flexible NO-750 insures smooth slip-roll action needed for strong, uniform yarn.

ARMSTRONG'S ACCOTEX APRONS

one of Armstrong's complete line of textile mill supplies

Performance Rated

Century TEXTILE MOTORS SHRUG OFF LINT



This team of Century 1½ H.P. Textile Motors delivers reliable performance driving cotton cards.

Job-Dependability Proved in Plants Like This

- Because of their ability to *"Shrug Off Lint"* and maintain normal operating temperatures, Century Textile Motors extend insulation life . . . deliver more dependable operating hours in your plant.
- Wide open, smooth-surfaced ventilating passages—together with strong air blast from integral cast aluminum rotor fans—keep vital motor parts free from lint.
- Specify Century Motors for new equipment and for replacement. Full information is readily available at your nearby Century District Sales Office or Distributor.
- Ask for Textile Motor Bulletin 14-193 Page 1. Other bulletins available on AC or DC Motors . . . ⅛ to 400 H.P.—Drip Proof, Splash Proof, Dust Proof, Explosion Proof.

CE 841

Century Selective Speed Drives...
1 to 150 H.P. Ask for Bulletin 11-1 Page 1.

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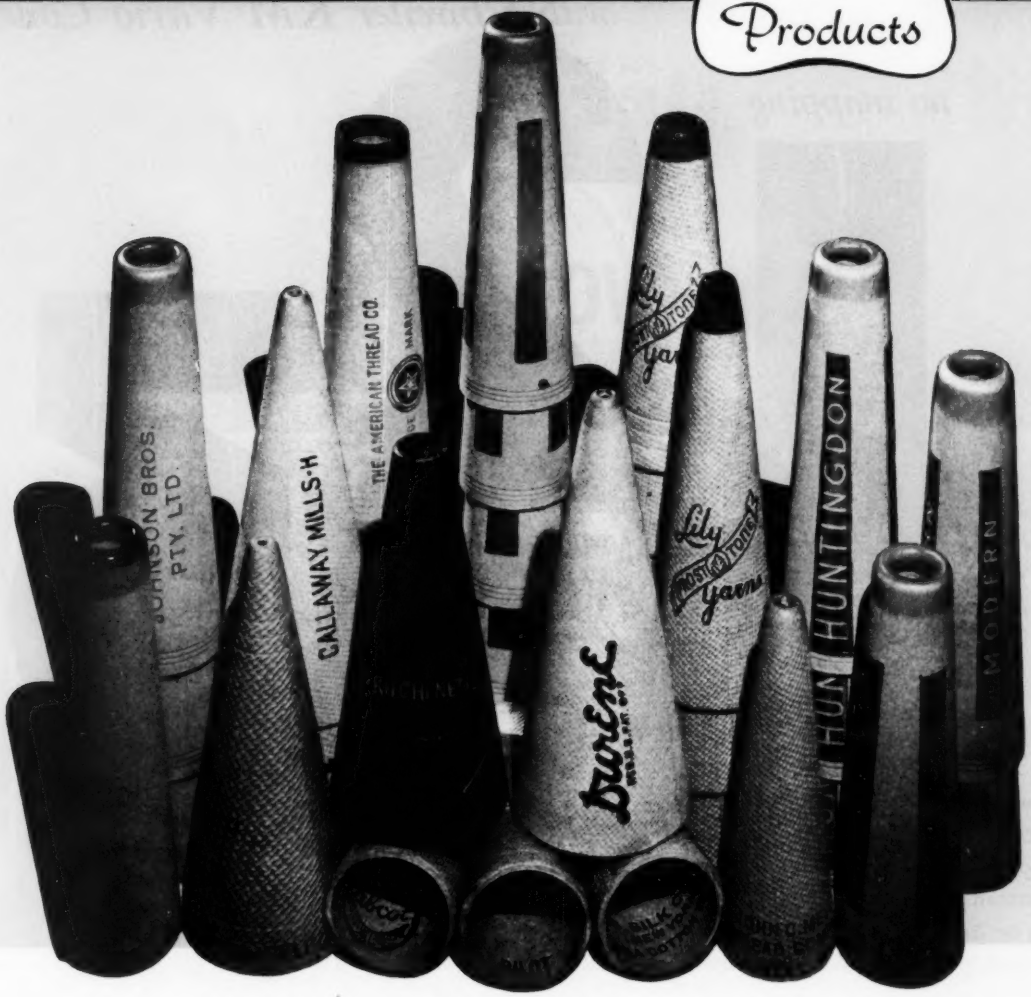
Century C MOTORS

SONOCO CONES

Precision Paper Products



VISIT SONOCO

Booth 241
18th SOUTHERN
TEXTILE
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October 4-8

Standard of the world wherever textiles are made . . . for more than 50 progressive years — the right cone to fit the yarn! And to aid in quick yarn identification, SONOCO can supply cones in plain or colored stock, lacquer tipped, treated or impregnated, colored base and tip, or printed inside or outside. Cones may also be ordered with notches, scores, perforations, in many engineered tip designs—plain, embossed or with Unitex or Velvet surface. Further information may be obtained by discussing your requirements with one of Sonoco's experienced sales engineers or by writing direct.

SONOCO PRODUCTS COMPANY

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HORGEN - Zurich (Switzerland)

Reduce **WINDING** *costs*

with Schweiter KM Vario Coners

no snapping

1

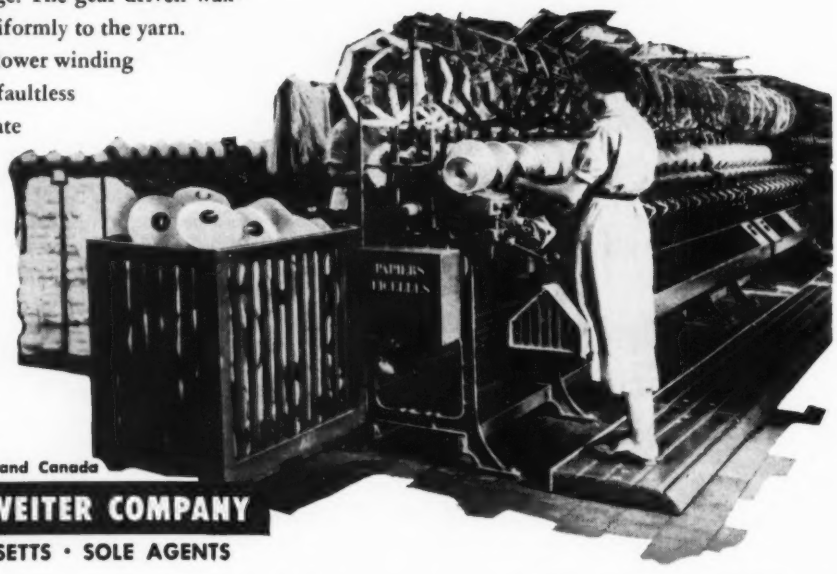
2

no tangling

3

no stretching

● Schweiter KM Type Vario Coners silently wind a knotless yarn to the famous Schweiter Vario Cones without waste. The exclusive tension control and automatic stop motion for yarn entanglement in the skein prevent stretched yarn and yarn breakage. The gear driven waxing device applies more wax uniformly to the yarn. The result is perfect knitting at lower winding cost and volume production of faultless cones—even with most delicate yarns."



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Sales and Service in the United States and Canada

The AMERICAN SCHWEITER COMPANY

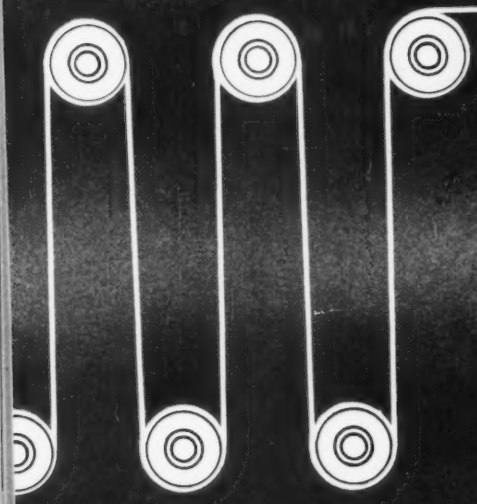
WHITINSVILLE, MASSACHUSETTS · SOLE AGENTS

change THIS to THIS

with

STOWE-WOODWARD

MICROROK ROLLS



for uniform extraction

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN - NEWTON 64, MASS. -

FOSTER MODEL 202 AUTOMATIC CONE WINDER

It will Pay for Itself in 2 to 5 Years

HERE'S HOW:

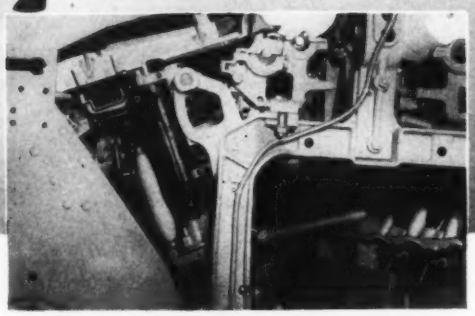
It automatically ties 2 or 3 times as many knots per minute as an operator can by hand.

It produces about twice as much poundage per hour per operator as a non-automatic machine.

It reduces operating costs by about 50%, as compared with a non-automatic machine.

On fine counts or with large bobbins an operator can handle two machines.

Write for Bulletin No. A-100.



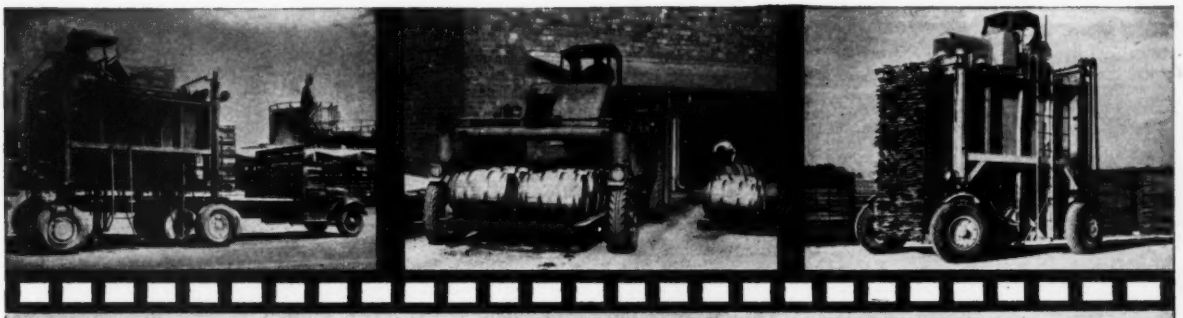
Looking into Automatic Tender where end from cone is sucked into Aspirator. Note empty bobbin is automatically doffed onto conveyor, while full bobbin moves into place.

Showing automatic sorting of empty bobbins into one box and partially filled bobbins into another box.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.

Southern office — Johnston Bldg., Charlotte, N. C. *Canadian Representative* — Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 35-37 King St., W., Toronto, Ont. *European Representative* — Muschamp Textile Machinery Ltd., Keb Lane Bardsley, Ashton-under-Lyne, England



One man loads it . . . in 3 seconds, up to 50,000 lbs. . . .

One man drives it . . . speeds up to 56 mph

One man unloads it . . . in 3 seconds

You are invited to a free showing of

"Over-the-Load Materials Handling"

a 25-minute sound movie starring the **ROSS CARRIER**

You can revolutionize your handling operations! You can move materials faster, farther, at less cost, and this new movie shows you how to do it. As in the above pictures from the film, you'll see the Ross Carrier handling pineapples, whiskey barrels, lumber packages, heat exchangers, cotton bales, steel tube—for aggressive, cost-conscious companies which have discovered the unique advantages of over-the-load handling. If you are sincerely interested in knowing what's new in materials handling, you won't miss this free movie. It's available on a loan basis—simply send the coupon to reserve your showing. We'll mail the film to you—your only cost is return postage.

CLARK EQUIPMENT

ROSS CARRIER DIVISION
CLARK EQUIPMENT COMPANY
Benton Harbor 27, Mich.

Send "Over-the-Load" movie for showing on (give 2 choices):

Dates 1) 2)

Name_____

Firm_____

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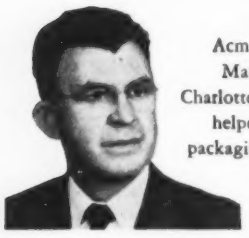
AIM* for INCREASED packaging productivity with Acme Steel Strapping Ideas



Acme Idea Man, Mark Brown of Charlotte, N. C., has helped solve this packaging problem.

ask your
*Acme Idea Man
to help solve your
problems

Acme Steel Strapping Idea #402 for securing tire fabric helps keep shipments at Firestone Textiles, Gastonia, N. C., abreast of continuous production schedules. The bulky rolls of tire cord fabric, five feet long and up to 36" in diameter, are covered with burlap and then firmly bound with steel strapping. Acme Steel Strapping, as used in this one operation, makes it possible for two men to package ten to twelve 1300-pound rolls an hour. This application of Acme Steel's strapping methods and tools at Firestone reduces materials handling and shipping costs and makes sure merchandise will arrive undamaged.

Your Acme Steel Idea Man is a specialist in all problems involving materials handling. He's always ready to help save time and money in your shipping and packaging operations. Call him —or write Acme Steel Products Division, Dept. TW-EE-104, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Illinois.

AIM *For Safe, Lower-Cost Shipping*

ACME STEEL

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YARN DYED FABRICS —

the Royalty of Textiles

Part of French Waistcoat, about 1800.
Museum of Art, R. I. School of Design.

THE French dandy who wore this waistcoat, about 1800, was probably high in the favor of Napoleon's new state, for at that time yarn dyed fabrics were literally "the royalty of textiles" — too expensive for the average man.

Today yarn dyed fabrics are *still* the royalty of textiles, representing the ultimate in textile artistry and craftsmanship. However, modern mass production methods have put them within the reach of all.

Franklin Process is playing an important part in producing quality yarn dyed fabrics at low cost. With the largest package yarn dyeing capacity in the world, five strategically located plants and a Yarn Purchasing Department, it can serve the needs of the textile industry promptly, efficiently and at competitive prices.

Franklin Process

COTTON YARN MERCHANTS & LARGEST PACKAGE DYERS IN THE WORLD
New York Representatives — 40 Worth Street
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SIZING & STORAGE TANKS

- ✓ Supplied plain or insulated in boiler iron or stainless steel
- ✓ Geared-end motor drive, vertical shaft in center with paddle, bearings both top and bottom of tank
- ✓ Available with open heating coil for cooking, closed coil for storage
- ✓ Provision for thermometers and controls, 1/3 of top cover hinged for opening
- ✓ Capacity 100 to 500 gallons, bottom dished to permit perfect drainage
- ✓ Insulation on stainless tanks is covered with stainless steel — essential where solutions or atmosphere induce corrosion

HOMOGENIZER-DISPERSERS

- ✓ Manufactured by "Tri-Homo", distributed by Riggs & Lombard to the textile trade
- ✓ Effects a stabilized colloidal dispersion in the micron range of particle size
- ✓ Rotor's centrifugal force thoroughly mixes solids with vehicle, displaces air in solids, thoroughly wets particles — eliminating surface tension
- ✓ Three rotor-stator grinding and homogenizing surfaces subject compound to terrific hydraulic shearing action
- ✓ Hand gear accurately adjusts spacing between rotor-stator surfaces to determine particle size of compound
- ✓ Time cycle can be controlled to precise requirements, with proper rotor-stator combination and correct operating speed and rotor clearance
- ✓ Gravity feeding is standard, with optional equipment for pump feeding available— variable speed, if required
- ✓ Ruggedly durable precision-built machines, easy to adjust, operate, and clean
- ✓ In wide range of standard sizes, also built in sizes and with variations to suit any production need

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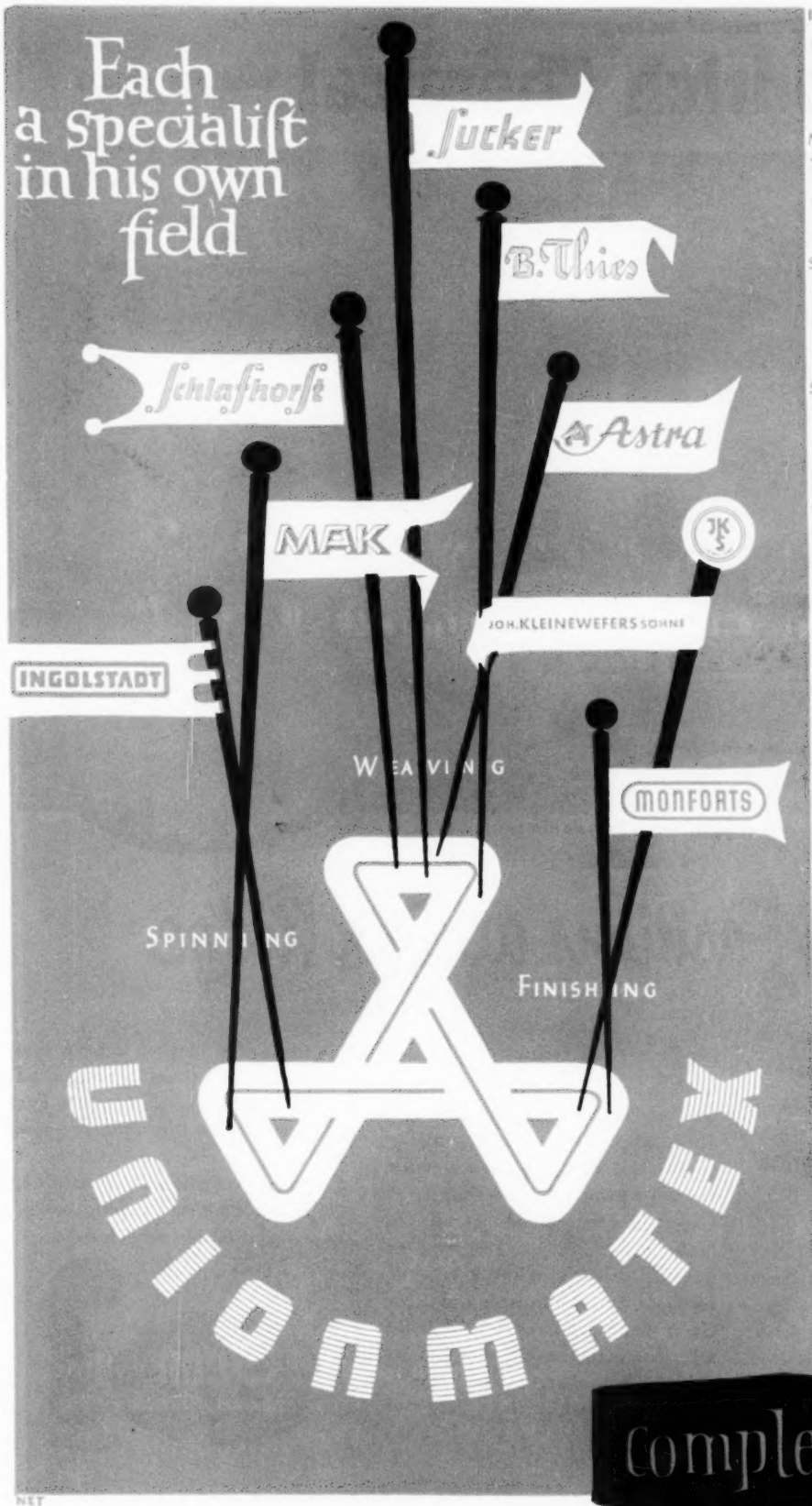

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SPINNING MACHINERY FOR COTTON-WORSTED-CUT RAYON

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CARD SETS · SELF-ACTING MULES · RING SPINNING FRAMES

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complete plants

Another new development using

B. F. Goodrich Chemical *raw materials*

B. F. Goodrich Chemical Company does not make these shoe covers. We supply the Geon paste resin for the coating only.

Shoe Fashions at Oak Ridge

YOU MIGHT laugh at yourself the first time you wore these shoe covers, but their purpose at an Oak Ridge Atomic Energy Plant is no laughing matter.

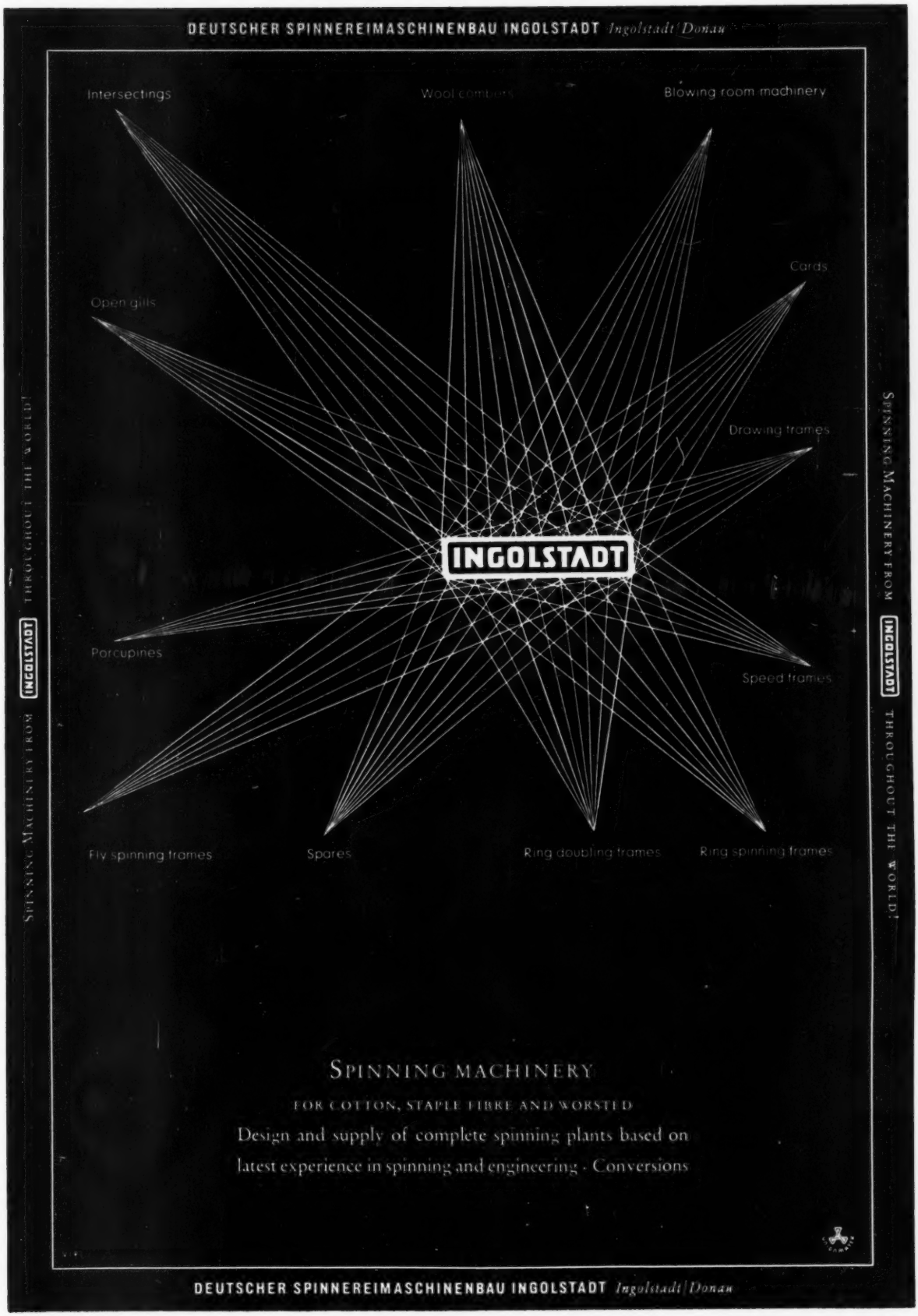
These canvas shoe covers help prevent the spread of radioactive contamination. Workers slip them on over their shoes when entering a contaminated area. They are made of canvas, with the walking surface coated with a plastisol based on Geon paste resin.

They are thoroughly flexible, and the Geon coating gives them a tough, abrasion-proof surface. The cost of these shoe covers is low despite their important use—thanks to Geon! Maybe this unique use for Geon may help you improve or develop more saleable products, for Geon-based plastisols and other Geon materials have helped build sales for many products—such as colorful upholstery, wire insulation, rigid paneling and tubing and many more.

Check with us; we'll help you select the Geon material best suited to your product's requirements. For technical information, please write Dept. GU-5, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors


DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT Ingolstadt/Donau
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Wool combers
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Drawing frames
INGOLSTADT
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SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!
SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!
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FOR COTTON, STAPLE FIBRE AND WORSTED
Design and supply of complete spinning plants based on
latest experience in spinning and engineering · Conversions
DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT Ingolstadt/Donau

"This solution satisfied the Safety Engineering Department..."

A leading carpet manufacturer in the Philadelphia area was faced with a serious problem – oil slick floors caused by lubricant leakage and throw-off. The Safety Engineering Department issued frequent warnings about dangerous conditions near the looms. Both conventional and special-purpose lubricants were tried but they either did not do a proper lubricating job or failed to stop the leakage.

When Sinclair Lubrication Engineer Harry Donovan was called in, he spent several days observing operating conditions. "Then," he reports, " I recommended Sinclair NO DRIP. I reasoned that Sinclair NO-DRIP was the right oil for this job because it is a high quality lubricant *especially fortified with Sinclair-developed additives to eliminate leakage and throw-off*. A trial period proved this recommendation entirely solved the problem. Soiled, slippery floors were eliminated and oil consumption was cut. What's more, Sinclair NO-DRIP Oils' superior lubricating qualities decidedly lengthened bearing life."

SINCLAIR LUBRICANTS

Why not let a Sinclair Lubrication Engineer help solve *your* lubrication problem? *There's no obligation.* Contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

GAIR can help MEET YOUR DEADLINES

with assured delivery service

It's not hard to get a promise of shipping container delivery. But often there are a number of "ifs" in that promise. "Ifs" that don't exist at Gair.

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"If our manufacturing schedule holds up" is another qualification you won't hear from Gair. We have *eleven plants*, equipped to fabricate whatever quantities and types of corrugated or solid fibre shipping containers you need.

"If local transportation facilities stay on schedule" is a third worry you don't have with Gair. Gair trucks provide a neighborhood service from strategically located plants.

Check your nearest Gair plant for the complete story on Gair-designed shipping containers to meet your specific needs. SC.4.2

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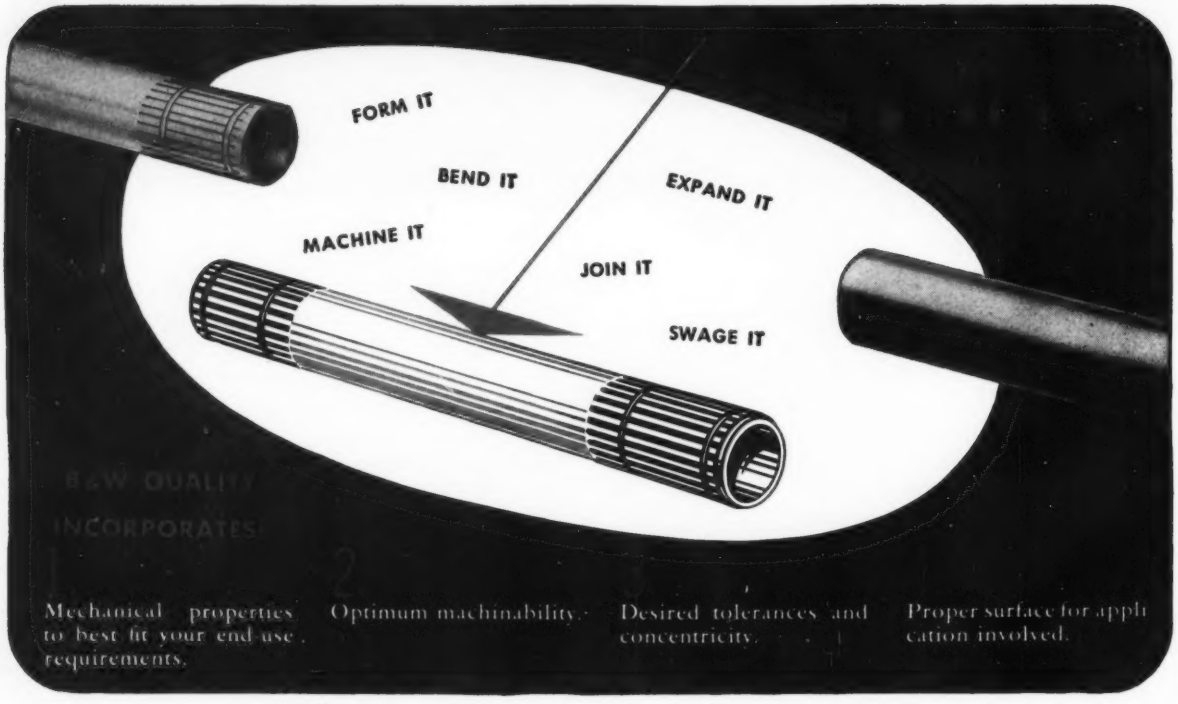

Mechanical properties to best fit your end-use requirements.

Optimum machinability.

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SANDOZ'

LANASYN

If you're dyeing wool, nylon or silk in yarn, piece goods, top or raw stock, here's a way to do it faster:

Sandoz metal complex Lanasyn colors, dyed neutral or with small amounts of Ammonium Sulphate, cut boiling time an average of 30 to 40 minutes. There's less damage to the fibre and less felting and your goods come through in better condition after dyeing.

Lanasyn colors have excellent fastness properties equal to most chrome dyes. The Lanasyns have a similar dyeing rate and can be used with chrome colors as well as other neutral metallized dyes.

NEW LANASYN BROWN

The most recent addition to the line is LANASYN BROWN 3RL (Pat. Appl. for), a rich, reddish brown distinguished by its superior fastness to light and fulling and freedom from "skitteriness".

Our growing Lanasyn line includes Lanasyn Orange RLN (Pat. Appl. for), Lanasyn Yellow GL, Lanasyn Yellow 2RL (Pat. Appl. for), Lanasyn Blue GL (Pat.), Lanasyn Grey BL, Lanasyn Green (Pat.), Lanasyn Brown RL (Pat.).

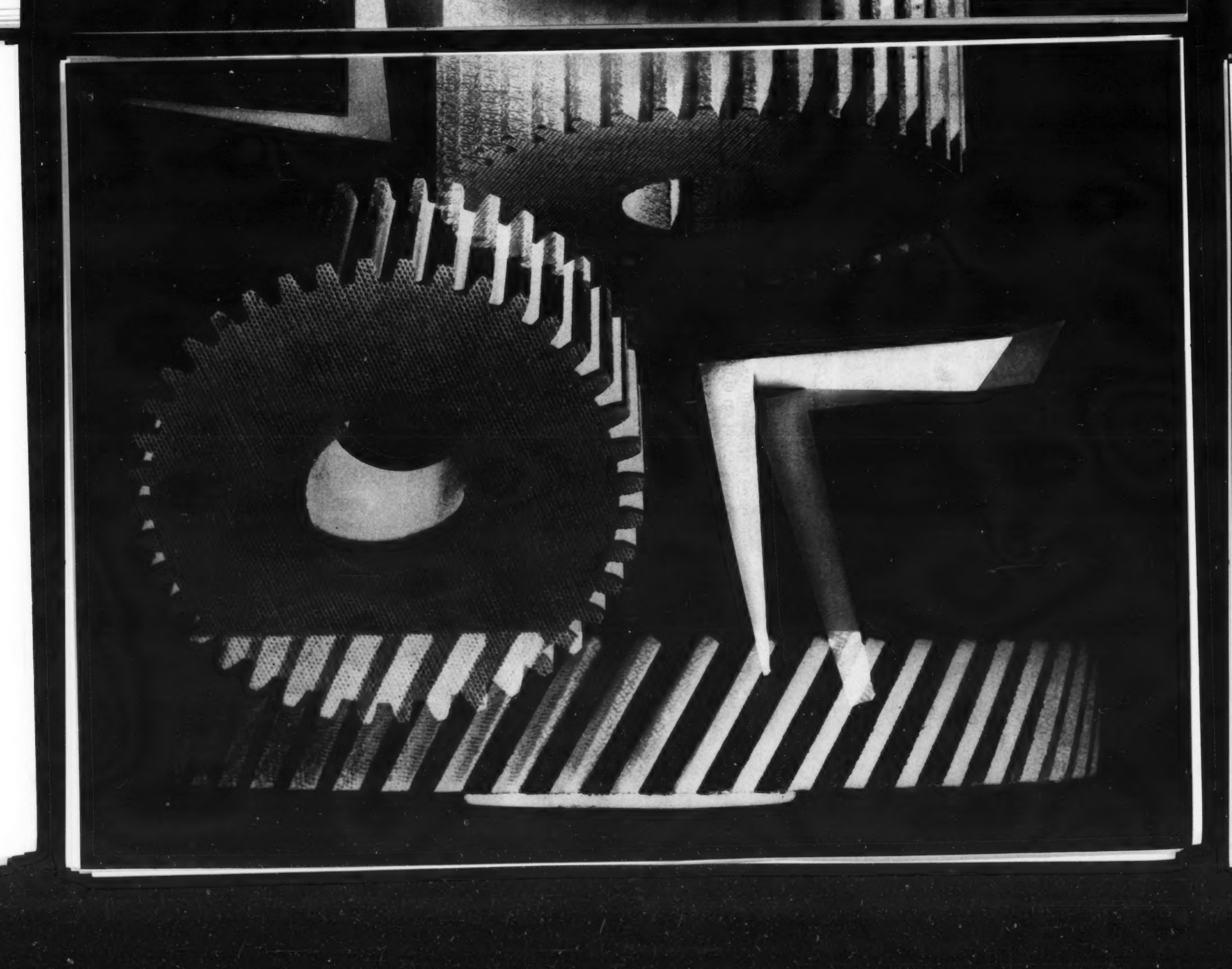
Write for complete information including samples and fastness properties on wool, silk or nylon in whatever colors you're interested in. Sandoz branches are in Hudson, Mass.; Fairlawn, N.J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal; Toronto. *Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N.Y.*

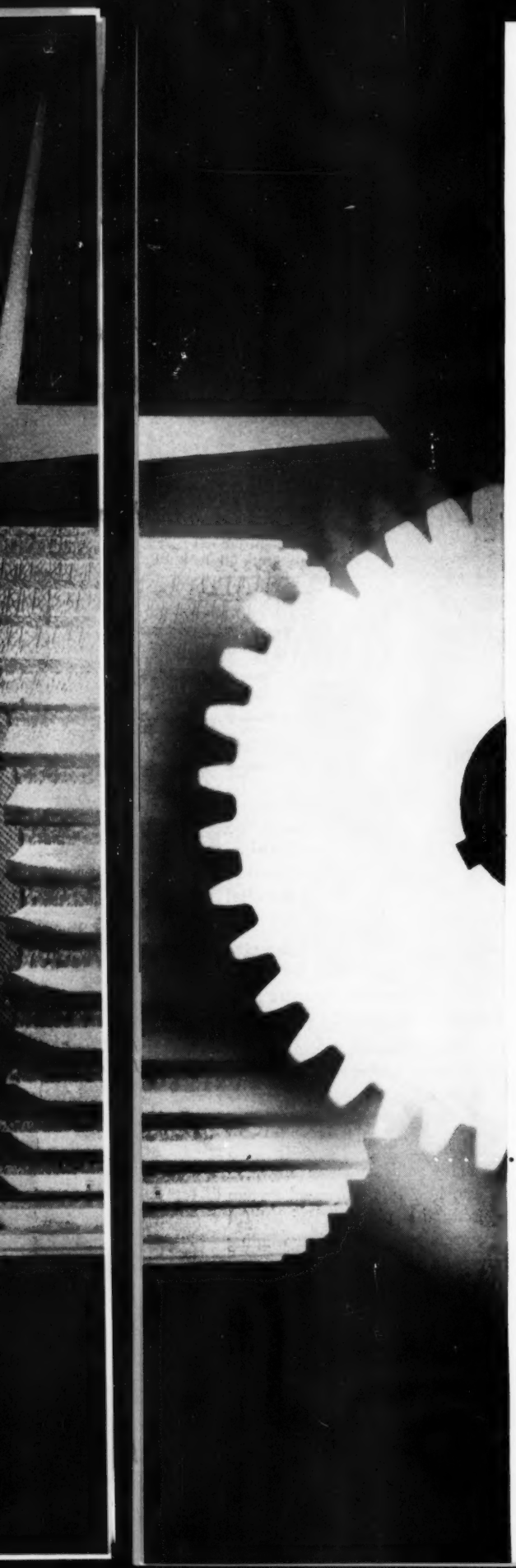
3.9

SANDOZ

SANDOZ

THINKS AHEAD WITH TEXTILES





HOW CAN WE SHAPE VERSATILE **MICARTA** TO YOUR NEEDS?

MICARTA's use in many grueling gear applications may suggest to you the numerous possibilities offered by this strong, lightweight, wonder-working material. For example, MICARTA's ability to soak up impact instead of transforming it into noise and vibration may answer your need for a better moving part. Or, perhaps your problem calls for a material that will resist moisture, or stand up in corrosive atmospheres, or withstand extremes in temperatures.

These and many other unique properties owned by MICARTA® promise practical and rewarding ways to solve product design or production problems. For complete information on this hard-working, cost-saving material, simply use the coupon below. J-06574

MICARTA IS SERVING ALL INDUSTRIES

AVIATION: Pulleys, instrument panels, structural members

MARINE: Propeller shaft bearings, bushings, piston rings

STEEL: Roll-neck bearings, hold down and upcoiler rolls

TEXTILE: Spinning buckets, shuttles, spools, bobbins, gears

CHEMICAL: Bubble caps, plating barrels, tubing, valve blocks

ELECTRICAL: Coil forms, terminal blocks, panels, name plates

YOU CAN BE SURE...IF IT'S Westinghouse

Westinghouse Electric Corporation
Micarta Division
Trafford, Pa.

Attention: L. A. Pedley
Sir: (Please check one)

☐ Please have your representative call
☐ Please send me complete facts on Micarta

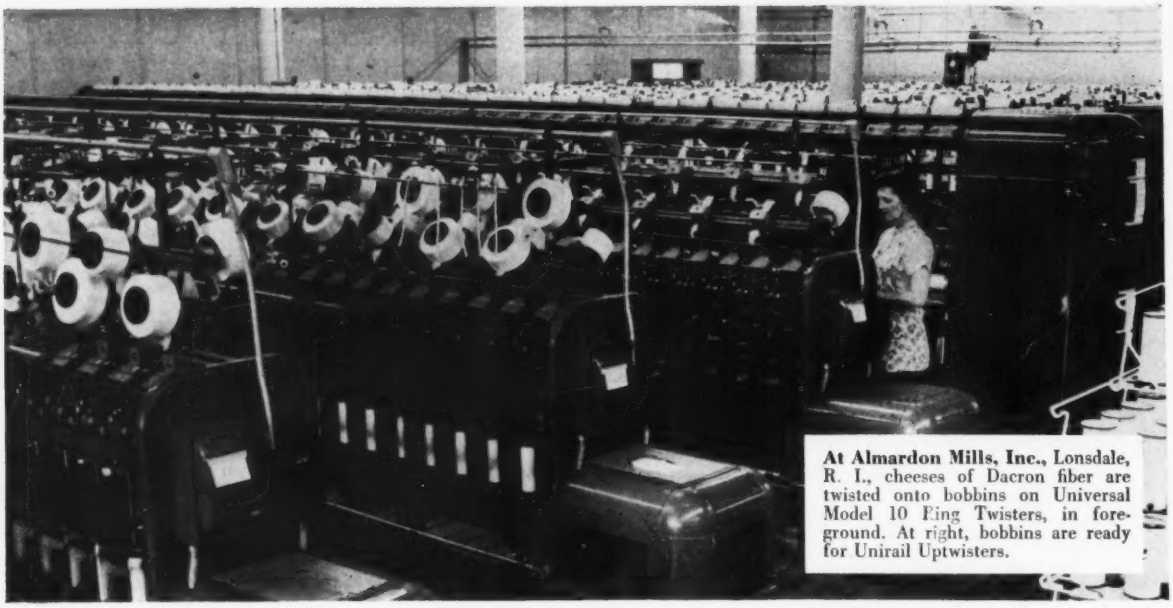
Name_____ Company_____

Address_____

City_____ Zone_____ State_____

TW-10-54

micarta® IS BASIC



At Almardon Mills, Inc., Lonsdale, R. I., cheeses of Dacron fiber are twisted onto bobbins on Universal Model 10 Ring Twisters, in foreground. At right, bobbins are ready for Unirail Uptwisters.

Almardon Mills Solves the Dacron-Twisting Problem

Increases production of top-quality yarn to a new high — cuts costs to a new low — with Universal equipment.

Supplied with zero twist, and requiring a high final twist, Dacron has introduced new throwing problems to mills processing this new fiber.

Almardon Mills was no exception. Using its previous equipment, this well known producer of fine quality Dacron piques and lenos was redrawing 70 denier Dacron from cheeses to bobbins, then throwing 20 turns of twist on 12 ounce package uptwisters. Uptwisting speed was slow, the filaments opened, and breakage was high. Flyers were necessary, and due to the abrasive action of Dacron, had to be replaced at every doff. And, if relaxed yarn was required, the added cost of rewinding was necessary.

Here, in the words of Chester H. Boyce, Almardon Vice President, is how this mill solved the Dacron problem:

"We worked out a process with Universal, combining their Model 10 Ring Twisters with their new Unirail® Headless Package Uptwisters. This changed the picture completely. With the Model 10 creels we can insert two turns of twist direct from the cheeses without redrawing. High speed uptwisting is then possible without separation of the filaments. And the Model 10 bobbins are the ideal supply for Unirail Uptwisters.

"Our Unirail Uptwisters put in remaining 18 turns at 14,000 r.p.m. without flyers. And right there we've cut down labor costs and boosted production. No more flyer replacements, and breakage is practically nil.

"Now, with our Universal combination, we're producing big pound-and-a-half Dacron packages — headless packages with *controlled relaxation of the yarn* without rewinding. In our experience, this is the best package you can get for delivery to warping and quilling."

If you are one of the many mills now working with Dacron, why not investigate how this Universal system can improve your own production picture? For helpful information on this — or on any other twisting or winding application, see your Universal representative.

UNIVERSAL WINDING COMPANY

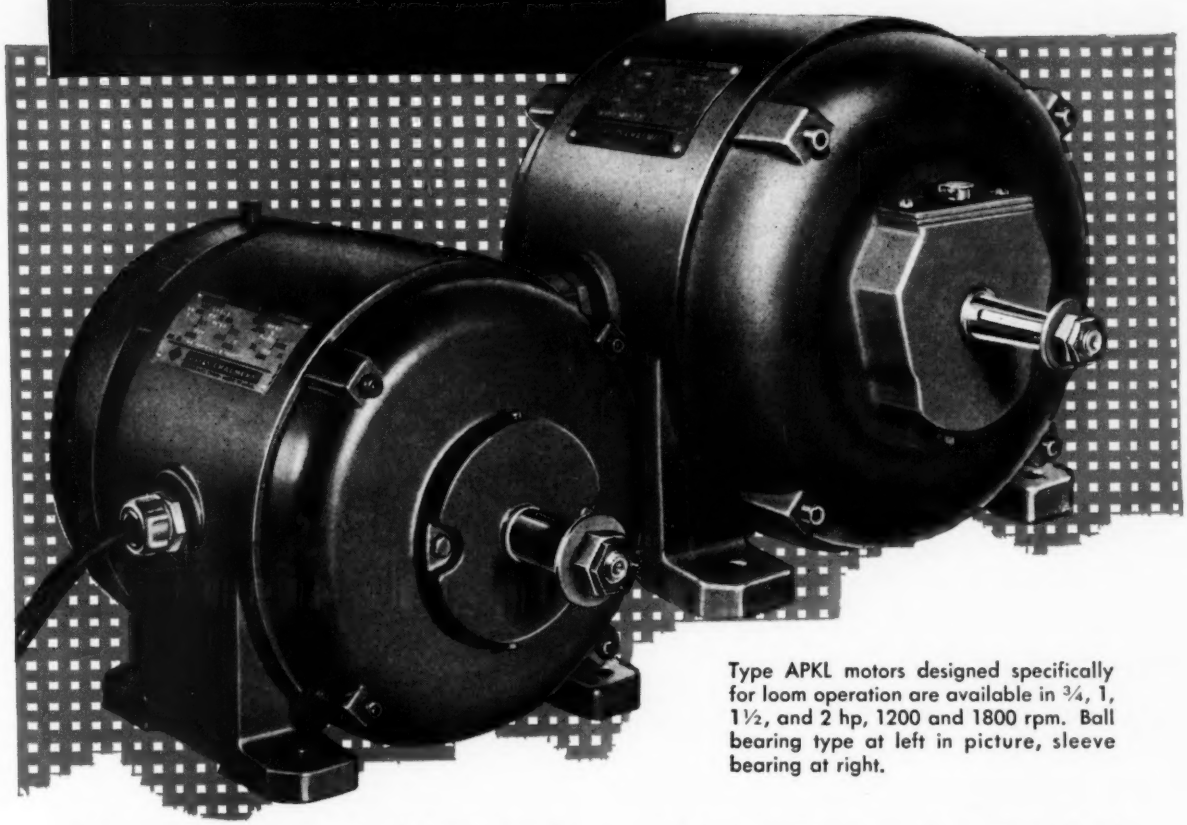
P. O. Box 1605 Providence 1, Rhode Island

BOSTON, PHILADELPHIA, UTICA, CHARLOTTE, ATLANTA, LOS ANGELES; MONTREAL, HAMILTON, CANADA; MANCHESTER, ENGLAND; PARIS, FRANCE; BASLE, SWITZERLAND

Agents in every principal textile center throughout the world
Winding and Twisting Machinery for Natural and Synthetic Yarns

New Loom Motor

Specially built for high speed loom operation



Type APKL motors designed specifically for loom operation are available in ¾, 1, 1½, and 2 hp, 1200 and 1800 rpm. Ball bearing type at left in picture, sleeve bearing at right.

This entirely new loom motor design is a result of intensive Allis-Chalmers research into the true nature of loom loads at speeds up to 200 picks per minute and more. Several hundred motors of the new design have had more than a year of test in regular mill operations.

Features Proved in Operation

Cast-iron frame is totally enclosed, non-ventilated type that excludes all lint from internal parts, holds bearings in correct alignment and maintains uniform air gap. Feet are machined in a single operation, assuring perfect alignment and easy mounting.

Electrical design is generous. The stator is extra large and of heavy construction to provide electrical capacity and physical strength to meet stresses of rapid load oscillation. The rotor is of largest practical diameter in order to provide optimum flywheel effect (Wk^2). The motor operates at very stable speed under pulsating load conditions. A-4476

Allis-Chalmers loom motors are available with flywheel where required. Get complete information from your nearby A-C district office or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 51B7111B.

ALLIS-CHALMERS

CRUCIBLE REZISTAL STAINLESS STEELS

SAVE MONEY ALL THROUGH THE

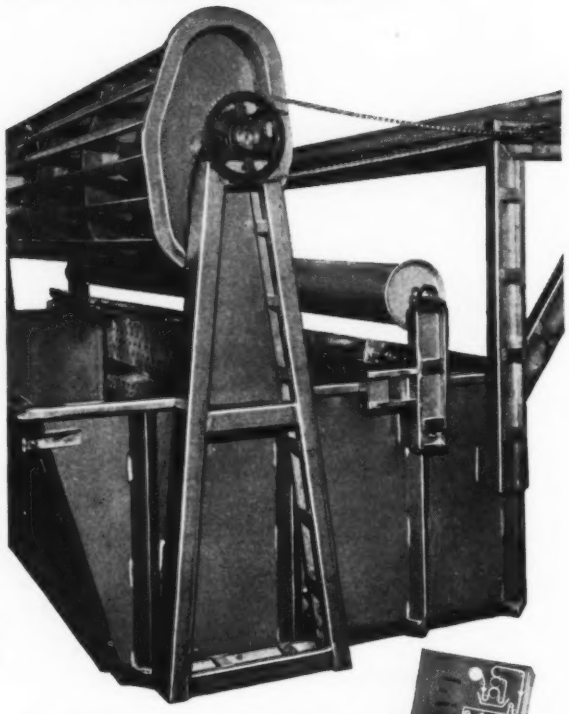
TEXTILE PLANT...

From control instruments to valves and piping . . . from aging to vacuum extracting . . . Crucible Rezistal® stainless steel equipment saves you money.

That's because stainless reduces maintenance and cleaning costs, increases production, and cuts down replacement or repair. And Crucible stainless steels are a perfect choice for operations involving corrosive materials.

It will pay you to check the need for stainless in your textile operations. New stainless machines, parts, hoods, ducts, drip guards or drains should be on your construction program in every case where they will pay their way in reduced operating costs.

In textile applications stainless is no luxury — in fact, it's the least expensive long-run material that money can buy. So let your Crucible representative help you explore new ways to cut costs with stainless.



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To Guarantee You Definite Benefits in Writing!

Yes, as part of our wool oil service, we *put in writing* the benefits you will receive! This exclusive service—the most complete offered by the industry—includes...

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R/M V-BELTS

If you use equipment powered by multiple V-belt drives, you can step up production efficiency — and lower costs — with R/M V-Belts. R/M Super-Power V-Belts and Condor V-Belts are the smoothest running V-Belts made because every part of their construction is precision-balanced. Straight sidewalls on these V-belts provide more grip, less slip, trouble-free performance. They last longer and do more work, too. On some drives you can count on 40% greater horsepower capacity with R/M Super-Power V-Belts as compared to regular V-belts . . . or do an equal job with fewer belts!

Whatever your particular V-belt needs, either R/M Super-Power or Condor is your assurance of longer belt life, improved performance and greater drive economy at your plant . . . "More Use per Dollar". Consult an R/M representative. Ask him about R/M Hose, Transmission, Conveyor Belts and other industrial rubber products for every use . . . in every industry.

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

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Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings
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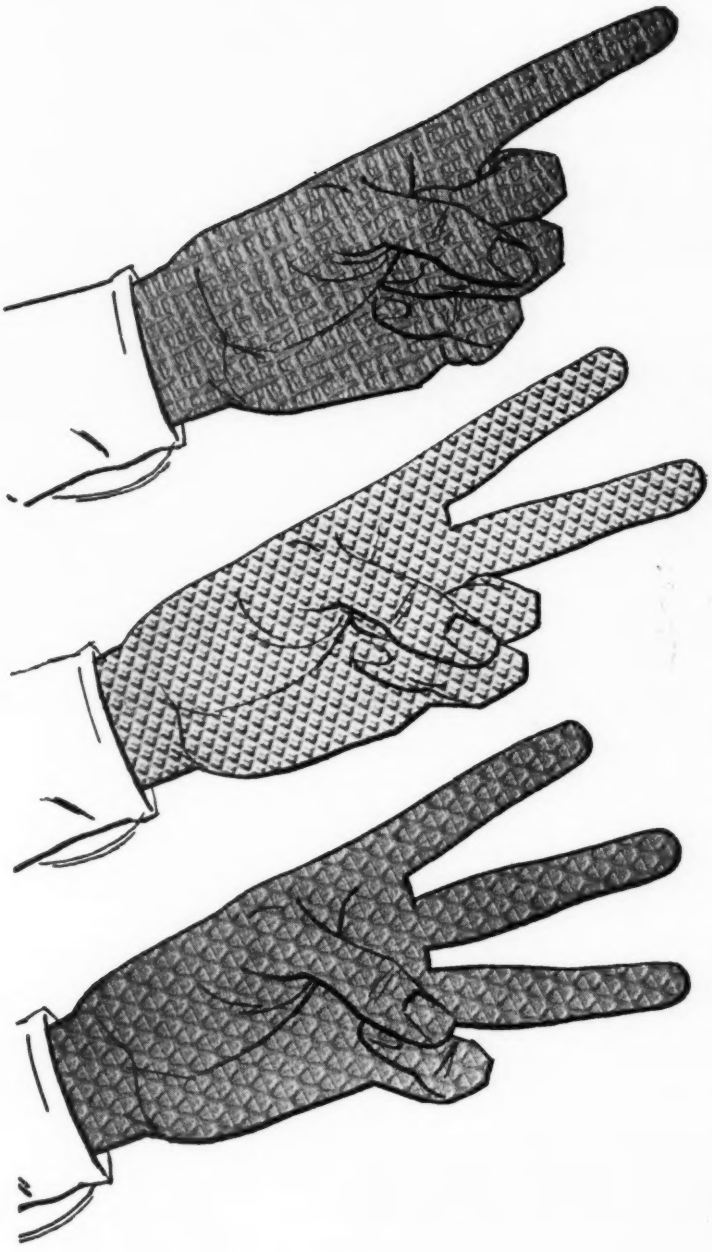
For more profitable embossing, use Monsanto's 3-point service



A full line of resins for your every need—melamine and modified urea (Resloom E-50) for embossed effects and crease-resistant applications . . . plus a series of three "AC" catalysts to meet your most rigid curing requirements.

New, unique research facilities—such as the first lab-scale embossing machine, and other Monsanto-pioneered equipment. Monsanto's resin technology can help you use *the right resin in the right way* to increase your embossing profits.

Experienced technical personnel—combining years of practical field experience with the latest technical knowledge and equipment to help you solve *your* particular problems. They have led the way to many basic developments in the textiles industry.

RESLOOM E-50 HAS MANY ADVANTAGES

This newest addition to Monsanto's broad line of finishes is a modified urea resin for deep embossed, glazed and Schreiner applications. It produces durable effects with improved hand —causes no yellowing due to chlorine pickup. Resloom E-50 does not build up on texturizing equipment, has excellent storage life and bath stability. It is compatible with hand modifiers and durable to washing. Resloom: Reg. U. S. Pat. Off.

To take advantage of Monsanto's 3-Point Service, just call, wire or write: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Mass.

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These men serve the Southern Textile area. Let them help you with your spinning and twisting problems.

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Keeping pace with the growth of the textile South, we have acquired a new, larger warehouse in Charlotte and carry there a very complete stock of Ring Travelers for spinning and twisting all natural and synthetic fibres. Wherever your plant is located, in the South or North, National Sterling Ring Travelers are promptly available. We have also increased our staff of spinning and twisting engineers who will gladly call for consultation at any time.

FOR TRAVELERS — ALWAYS SPECIFY NATIONAL

We offer over 18,000 different weights, sizes and styles . . . also special designs to meet your requirements. Full stocks are maintained in Charlotte and Pawtucket: U. S. Standard (American, Hicks, Wilson, Elliptic) and Wentworth (Double Duty or P. B., Gravity, Gravity Express, Bal-Ellipsoid).

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OLDEST AND LARGEST MANUFACTURER OF RING SPINNING AND TWISTING TRAVELERS IN THE UNITED STATES

DU PONT
REG. U.S. PAT. OFF.

PROPERTY AND APPLICATION DATA ON THESE VERSATILE ENGINEERING MATERIALS: "ZYTEL," "ALATHON," "TEFLON," "LUCITE."

NEWS

NO. 4 — 1954

Gain Longer Service Without Oiling With Parts of Molded Du Pont ZYTEL*

Construction well along on $3,000,000 Polychemicals laboratory in Wilmington

Du Pont is building a $3,000,000 Sales Service Laboratory in Wilmington, Delaware, to expand the present facilities of its Polychemicals Department. This new laboratory is to provide sales and engineering services to customers.

The laboratory will have the most modern equipment available for developing technical data on the use and processing of Polychemicals Department products. Its facilities for providing technical services, especially in the field of plastic engineering materials such as "Alathon" polyethylene resin, "Teflon" tetrafluoroethylene resin, "Lucite" acrylic resin, and Du Pont "Zytel" nylon resin, will be several times those of the present laboratory in Arlington, New Jersey.

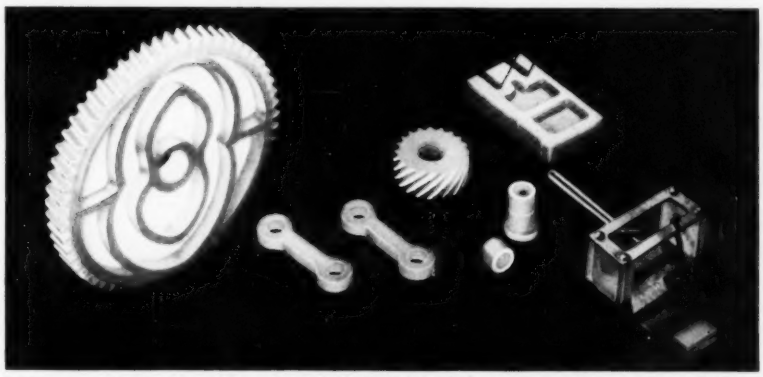
Parts of the new laboratory will be equipped especially for study courses on the utilization of new plastic engineering materials. Space for exhibits of these materials, and products made from them, is to be provided in a two-story reception area.

Large portions of the laboratory will be equipped for demonstrating new processing methods, and for testing. Total floor space: 62,000 square feet.

Preliminary work on the site is now under way and construction is expected to be completed late in 1954.

Textile machinery designers use "Zytel" profitably for many important machine parts

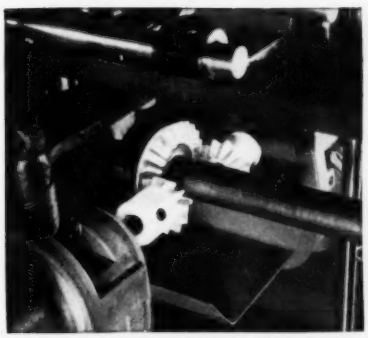
Textile machine designers have been plagued for years with difficult problems. Lint collection on machines is one. Oil splatterings on yarn or cloth, another, Molded Du Pont "Zytel" nylon resin has helped overcome these problems.



Parts economically and rapidly molded of Du Pont "Zytel" have remarkable abrasion-resistance. Lubrication is seldom needed, reducing oil splatter on yarns and cloth. These parts are used on the Automatic Radial Quiller, manufactured by the Abbott Machine Company, Inc., Wilton, N. H.

One of the most important single properties of "Zytel" for textile machine operation is its remarkable abrasion-resistance. Bearings, rolls and other parts made of "Zytel" have a longer service life than did conventional materials previously used. This, in turn, shortens downtime. Parts made of "Zytel" won't attract lint or cause cloth spoilage from oil splatter because they run with little or no lubrication.

Here is an interesting example of molding with "Zytel" nylon resin—a yarn-tension brake pulley. Injection-molded pieces like this often replace two or more parts of an assembly, give resiliency and strength in thin sections.



Lower maintenance costs and elimination of lubrication are gained with these molded bevel pinion and drive gears of "Zytel" on this "Duplex" ring twister manufactured by the Fletcher Works, Philadelphia, Pa.

High Impact Strength

Parts molded of "Zytel" are tough, lightweight, and have high impact strength. Parts of "Zytel" can operate continuously up to 250°F.

(*Continued, column 1 back side*)

OVER

*"*Zytel" is the new trade-mark for Du Pont nylon resin.*

DU PONT

PROPERTY AND APPLICATION DATA ON THESE VERSATILE ENGINEERING MATERIALS: "ZYTEL," "ALATHON," "TEFLON," "LUCITE."

NEWS

NO. 4 — 1954

"Zytel" (*continued*)

"Zytel" offers still another advantage—rapid, economical production techniques. With injection-molding, for example, parts can be mass-produced in multi-cavity dies. Intricately-shaped molded pieces can often do the work of assemblies made from two or more pieces. Design is simplified, assembly time reduced. Many times, these parts of "Zytel" need no refinishing—are ready to go to work immediately after molding.

There are many potential textile machinery applications for parts made from "Zytel" nylon resin. Can this unique engineering material help you solve a design or operating problem? Clip the coupon below for more information about Du Pont "Zytel" nylon resin.

Investigate Du Pont engineering materials in your product development programs

One of the family of these versatile engineering materials is often a key factor in product improvement or new product design.

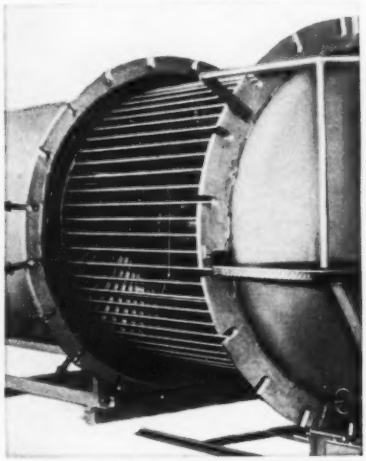
The wide range of properties available with "Alathon"* polyethylene resin, "Lucite"* acrylic resin, "Teflon"* tetrafluoroethylene resin, and "Zytel"† nylon resin are helping solve industrial design problems.

NEED MORE INFORMATION?

Clip the coupon for additional data on the properties and applications of these Du Pont engineering materials.

New dyeing machine has bushings of Du Pont TEFLON® to resist high heat pressures

Recently a new machine called the "Barotor" was developed for dyeing synthetic fabrics. The "Barotor" improves the dyeing of synthetics by utilizing high temperatures and pressures. The designers were faced with the problem of choosing a material to be used for the bushings which carry the many stainless steel cross bars. These bushings could not be affected by the dyeing process, and should be able to function without lubrication.



The new "Barotor" for dyeing synthetic fabrics uses heat- and pressure-resistant bushings of "Teflon" . . . gives smooth operation despite corrosive chemicals in dye solution.

"Teflon" Solves Problem

Bushings of "Teflon" tetrafluoroethylene resin were the answer. These bushings are unaffected by the high operating temperatures of the "Barotor," and the 25 lbs. per square inch pressure used. The corrosive chemicals in the dye solution can't corrode these bushings, as "Teflon" is chemically inert. As this unique engineering material is self-lubricating and has a very low coefficient of friction, the problem of lubrication was eliminated. Wear on both the bushings and the cross bar was minimized. Result: Frequent replacement of parts is eliminated, and a substantial saving of time and money is achieved.

Close-up of "Barotor," showing stainless steel cross bars and bushings of "Teflon."

Bushings of Du Pont "Teflon," formed by economical extrusion techniques.

"Teflon" is another in the Du Pont family of engineering materials which has a tremendous potential in the textile industry. For additional data on any of these Du Pont engineering materials, fill out the coupon at the left.

E. I. DU PONT DE NEMOURS & CO. (INC.)
Polychemicals Department
Room 1810, Du Pont Building, Wilmington 98, Delaware

Please send me more information on the Du Pont engineering materials checked: ☐ "Zytel"; ☐ "Alathon"; ☐ "Teflon"; ☐ "Lucite". I am interested in evaluating these materials for:

_____

NAME_____ POSITION_____

COMPANY_____

STREET ADDRESS_____

CITY_____ STATE_____

TYPE OF BUSINESS_____

*"Alathon", "Lucite", "Teflon" are registered trade-marks of E. I. du Pont de Nemours & Co. (Inc.)
†"Zytel" is the new trade-mark for Du Pont nylon resin.

Motorists: here's proof...

Gulf's cleaner-burning, super-refined gasoline solves today's No. 1 engine problem!

This lamp is burning the "DIRTY-BURNING TAIL-END" of gasoline which GULF refines out
This lamp is burning NEW SUPER-REFINED GULF NO-NOX, the cleaner-burning super-fuel

Laboratory tests promised...

. . . these *immediate* and *lasting* benefits from this new, super-refined fuel:

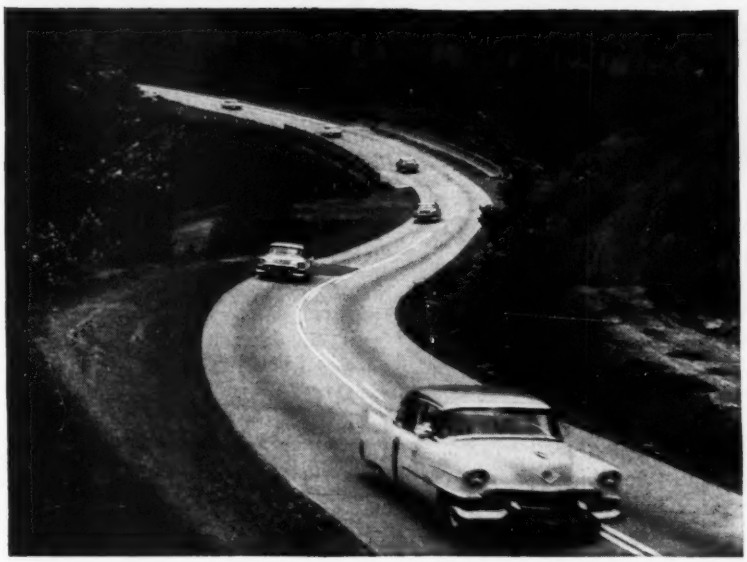
More complete engine protection than from the so-called "miracle-additive" gasolines. Why? Because Gulf refines *out* the "dirty-burning tail-end" of gasoline (the No. 1 troublemaker in high-compression engines)—and then treats this new Super-Refined NO-NOX to give it a *complete range of protective properties*. It protects *every* part it touches against carbon, rust, gum.

Extra gas mileage in all your everyday, short-trip, stop-and-go driving.

No knock, no pre-ignition. Why? Because the anti-knock power of new Gulf NO-NOX has been stepped up to an all-time high.

Stall-proof smoothness. Instant *starts*, too—and fast, fuel-saving warm-up.

That's why new Super-Refined Gulf NO-NOX gives your engine more power-with-protection than you've ever known.



Road tests proved...

These cars, powered by New Gulf No-Nox, actually performed better than new . . . after 15,000 miles!

True! After 15,000 miles per car—covering all conditions of city and country driving—Gulf test cars showed these results:

- Higher-than-new horsepower!
- Better-than-new on gasoline mileage!
- And not a single trace of carbon knock or pre-ignition at any time—even on the steepest mountain grades!

COMPLETELY NEW! SUPER-REFINED

New Gulf No-Nox

THE HIGH-EFFICIENCY GASOLINE

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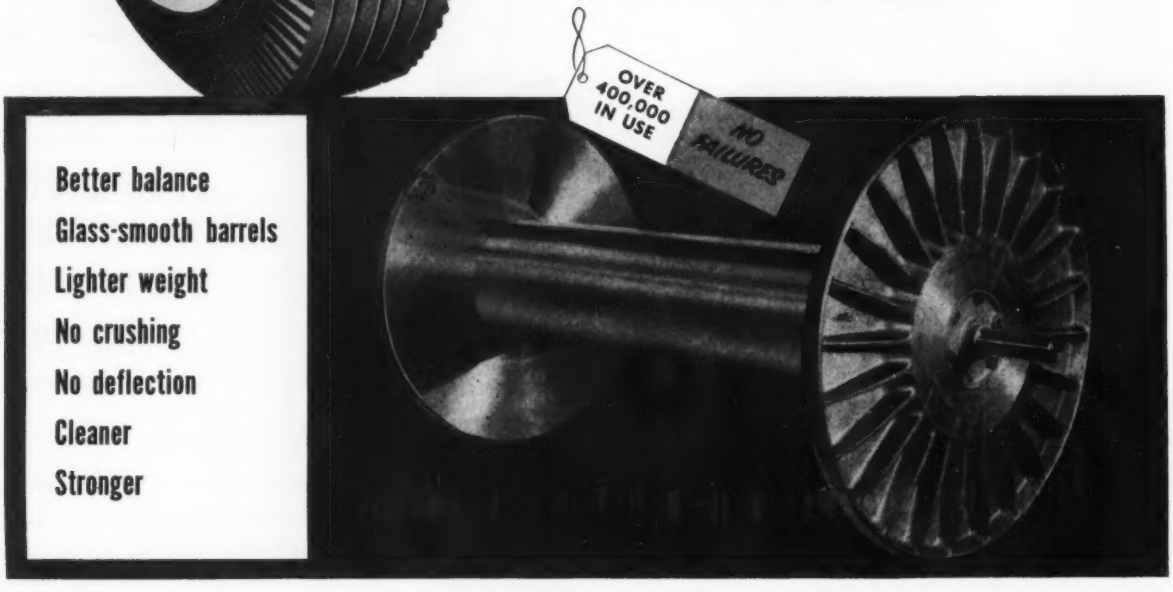
Aluminum warp beams offer seven basic advantages



- Better balance
- Glass-smooth barrels
- Lighter weight
- No crushing
- No deflection
- Cleaner
- Stronger

If your company produces or processes tire cord, you should know about aluminum warp beams. Particularly adaptable to operations involving synthetic fibers, aluminum warp beams are made stronger to resist deflection and crushing. They weigh up to 80 lbs. less than wood—reducing shipping costs and minimizing handling and stacking effort.

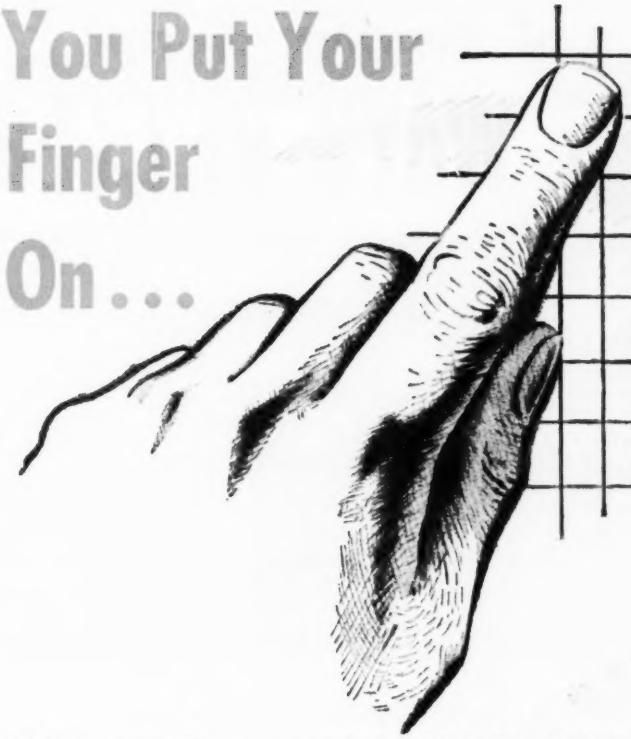
Aluminum beams are a machined product...in perfect balance when you get them and in perfect balance throughout their extra-long life. America's leading beam manufacturers can supply you with aluminum beams, so call their representatives today. They are:

Hayes Industries, Inc. **Hubbard Spool Company**
Milton Machine Works, Inc. **Briggs-Shaffner Co.**

If you'd like additional information on these cost-cutting beams, call your nearby Alcoa sales office, listed under "Aluminum" in the classified section of your telephone directory, or write: ALUMINUM COMPANY OF AMERICA, 2183-K Alcoa Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Whatever You Put Your Finger On...



- Sizing or Desizing
- Scouring
- Bleaching
- Dyeing and Printing
- Soaping after Dyeing
- Compressive Shrinking
- Finishing

There is an AHCOWET to do the job!

AHCOWETS — *Superior Surface Active Agents*

PRODUCT	GENERAL APPLICATIONS
Ahcowet 129	Continuous vat dyeing
Ahcowet N	Bleaching assistant, general purpose non-ionic
Ahcowet RS	Rewetting, comp. shrinking, finishing
Ahcowet ANS	Scouring synthetics, penetrant
Ahcowet 51	Economical detergent and penetrant
Ahcowet AF	Non-foaming screen printing penetrant
Ahcowet 126	Cationic for wetting and rewetting
Ahcowet VL	Retarding in vat dyeing, dispersant for acetate dyeing
Calsolene Oil HSA*	Dyeing of synthetics, non-rewetting

*Member of the AHCOWET family

ARNOLD, HOFFMAN

Associated with Imperial Chemical Industries, Ltd. London, England

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Offices and Sales Service Laboratories: Charlotte • Teterboro • Providence
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NEW BOOKLET on AHCOWETS Available

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Gentlemen:

Please forward a copy of your SYNTHETIC SURFACE ACTIVE AGENTS booklet.

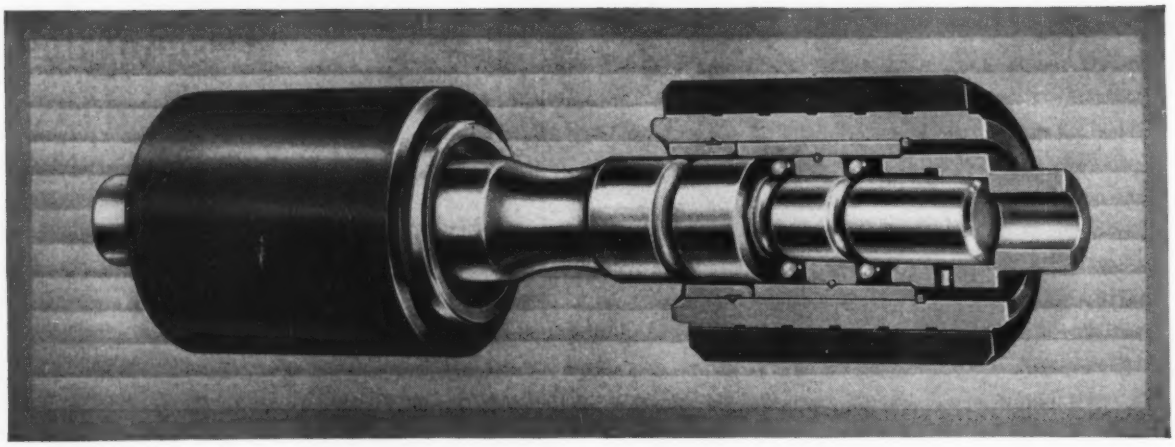
Name and Title .....

Firm Name .....

Address .....

City ..... State .....

from SKF a LOW COST ball bearing top roll 5 WAYS BETTER



Over five *million* SKF Ball Bearing Top Rolls in service are proving that they're 5 ways better—and any SKF District Office will show you that they're priced *right!*

Here are the 5 important advantages of SKF Ball Bearing Top Rolls

1 SKF's thick-walled, interchangeable, machined shells are easily removable for periodic cleaning. Can do accurate cot grinding. Experience no distortion.

2 SKF Rolls need re-greasing only at 20,000-hour intervals . . . equivalent to 3 years of three-shift, six-day week operation.

3 Ball Bearings provide concentric, non-wobbling rolling, which means a more uniform yarn.

4 SKF Top Rolls are available with open or closed ends, for all spinning and roving.

5 More SKF Rolls are in service throughout the world than any other make of anti-friction rolls, and have been successful for over 16 years.

In addition, of course, you obtain these well-established cost and quality advantages inherent in ball bearing top rolls—elimination of spoilage from oil leakage, minimized picking and cleaning, elimination of wear on the saddle, cap-bars, nebs and roll necks, reduced power consumption, and, altogether, *cleaner, stronger, more uniform yarns.*

Ask any SKF District Office to have a qualified Sales Engineer show you how to get the 5 important advantages of SKF Ball Bearing Top Rolls. Or, if you prefer, send for SKF Bulletin No. 1052.

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.—*manufacturers of* **SKF** *and* HESS-BRIGHT® *bearings.*

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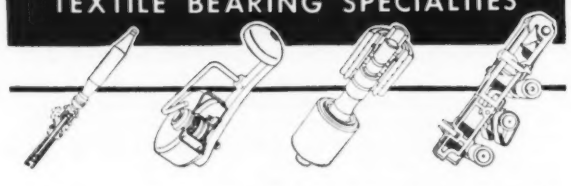
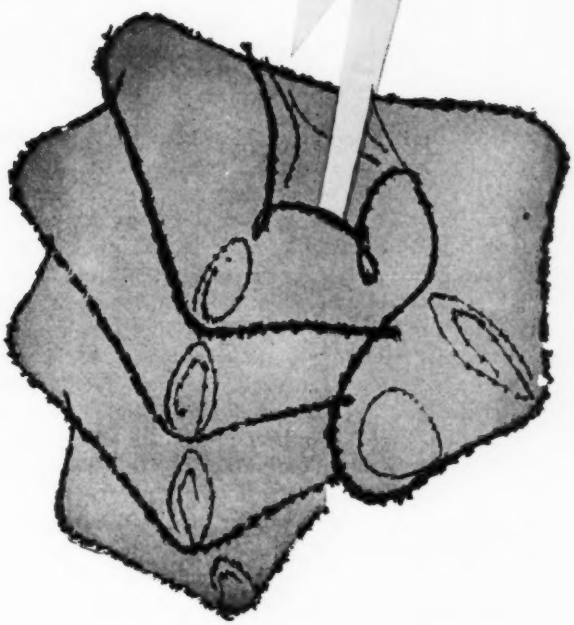
SKF®

TEXTILE BEARING SPECIALTIES



STOP STATIC PROBLEMS

with TWITCHELL 7421 OIL



controls static on modern blends and high-speed machinery!

Improve your quality and increase production yet hold down costs with this superior fiber lubricant.

You'll find that Twitchell 7421 Oil will control static build-up regardless of machinery or fibers used...yet this modern fiber lubricant is in the medium price range and possesses all other requisites of a modern fiber lubricant.

Since actual performance tells our story better than words, we urge you to try Twitchell 7421 in your plant...to see for yourself why it is the best value available.

excellent lubricity · high emulsion-stability · fluid emulsions

non-yellowing

rust inhibiting · easily scoured

If you would like a complete evaluation of Twitchell 7421 Oil as compared to eight leading medium priced wool and worsted oils, write to Dpt. W-10 for brochure titled, "TWITCHELL 7421 OIL."

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For more information, write direct or use Reader Service post card.

Take a tip from Mills like these

about FOXBORO Density Control

It's no accident that leading mills, like those listed here, are using and reordering Foxboro Density Control! It's paying dividends on caustic mercerizing . . . and on such other processes as resin padding and strong acid baths.

This patented* Foxboro Control System gives new highs in uniformity of finish, and at substantially reduced costs. There's no manual hydrometer sampling . . . no log keeping . . . no need for operators to guess. A single instrument precisely controls bath volume and strength . . . records inches of level and degrees Twaddell. It automatically compensates for moisture content of material, without the waste of over charging. "Wet or dry," treatment is always uniform. Chemical savings alone generally pay for the installation in less than three months!

You can quickly realize similar time and money savings — and better product quality — in your own mill with Foxboro Density Control. It installs easily on new or existing equipment. Why not write for complete information today?

*U.S. Pat. #2,394,549

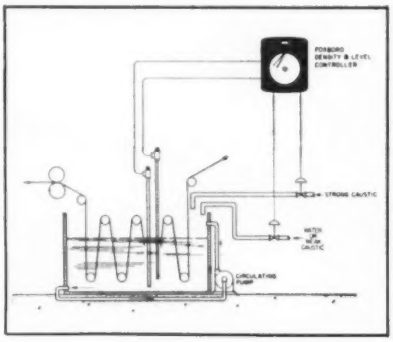

Diagram shows how Controller measures specific gravity and liquid level with bubble tubes in a mercerizing bath . . . operates diaphragm-motor valves to regulate strong and weak caustic

The American Thread Company, Sevier, N. C.
The Apponaug Company, Warwick, R. I.
Joseph Bancroft & Sons Co., Wilmington, Del.
Berkshire Fine Spinning Associates, Inc. (King Phillip Finishing Company,) Lonsdale, R. I.
Beaunit Mills Inc., Beverly, N. J.
Bradford Dyeing Assn., Bradford, R. I.
Cone Finishing Company, Greensboro, N. C.
Cranston Print Works Company, Cranston, R. I.
Cranston Print Works Company, Webster, Mass.
Defiance Bleachery, Barrowsville, Mass.
Dixie Mercerizing Company, Chattanooga, Tenn.
Dodgeville Finishing Company, Attleboro, Mass.
Dominion Textile Company Ltd., Montreal, Que.
Exeter Manufacturing Company, Exeter, N. H.
Fownes Bros. & Co., Amsterdam, N. Y.
Glenlyon Print Works, Phillipsdale, R. I.
Kendall Mills, (Division of the Kendall Company,) Walpole, Mass.
Kerr Bleaching & Finishing Works, Inc. Concord, N. C.
Mansfield Bleachery, Mansfield, Mass.
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Sellers Mfg. Co., Saxapahaw, N. C.
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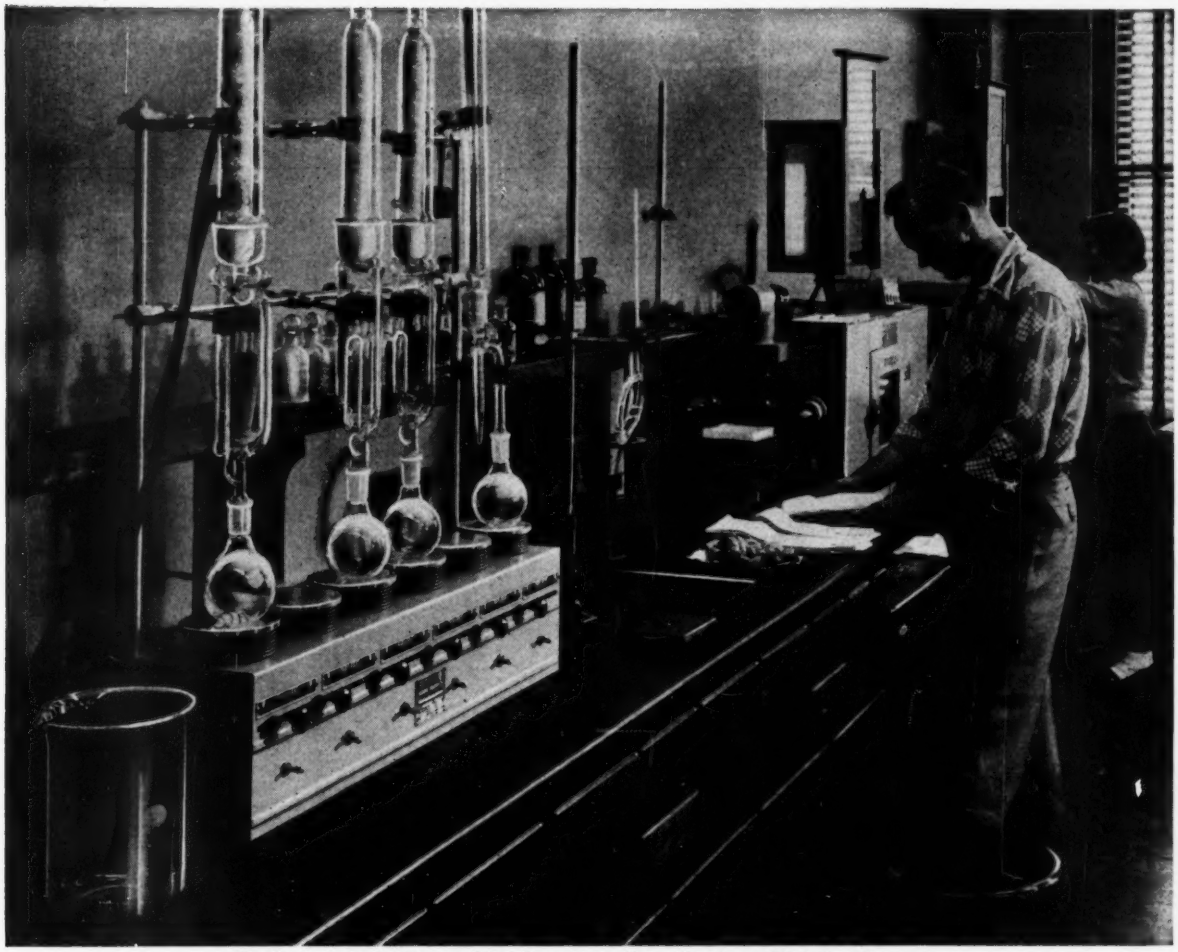


Testing yarns in Greenville laboratory, Corn Products Refining Company

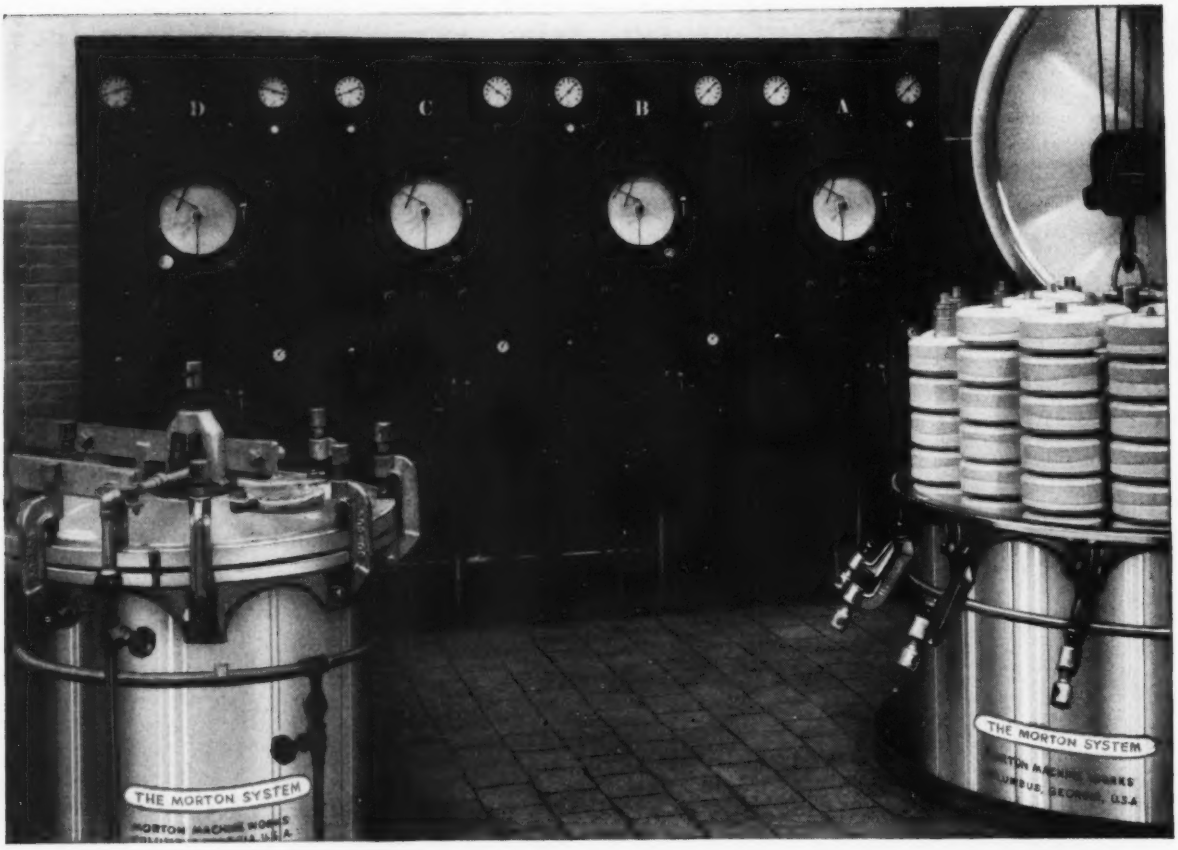
An analytical step in performance tests of a sizing formula

HOW CAN THIS MODERN LABORATORY SERVE YOU?

Primarily devoted to the evaluation and perfection of starch products for warp sizing, Corn Products Refining Company's field laboratory at Greenville, South Carolina now serves multiple purposes. The laboratory is centrally located and serves the textile industry in numerous capacities. Among the projects in force in this up-to-date laboratory are these:

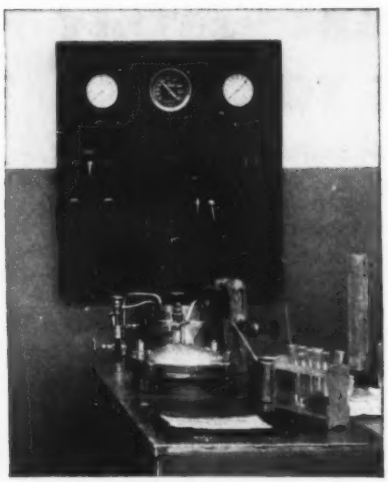
- **Conducting performance tests of various sizing formulas.**
- **Conducting check-tests on size content of yarn produced in a large number of textile mills.**
- **Perfecting size formulas for use under specific conditions.**

A close liaison between the laboratory and the company's field experts helps evaluate and solve mill production problems more speedily and effectively. This technical service is offered without cost or obligation to the industry. Inquiries or requests should be sent to:
Corn Products Refining Co., 17 Battery Place, N. Y. 4, N. Y.



THEY NEVER SAY DYE...

without Taylor controls at Hathaway Manufacturing Co., New Bedford, Mass.



IN THE LAB, as well as on their Morton Machine Company package dyeing machines, they rely on Taylor automatic controls to deliver uniformly high quality at minimum cost. Instruments for each machine are mounted on a Taylor coordinated panel and comprise:

1. A FULSCOPE* Controller with Process Timer for automatic control of temperature and the time of the overall dyeing cycle.

2. A FLEX-O-TIMER* Time-Cycle Controller which operates the dye liquor reversing valve, giving a specific inside-out and outside-in cycle. It precisely times flow reversal, thus assuring greater uniformity.

3. Signal lights which let the operator see at a glance just what part of cycle he's in. They also let him know the direction of flow at any time.

This package dye control system is only one of the many ways you can "beat rising costs with Taylor Accuracy." Whatever dyeing problems you have, we can help you solve them by working out an efficient Taylor Automatic Control System for you. Ask your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N.Y. or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

*Reg. U.S. Pat. Off.

Taylor Instruments MEAN ACCURACY FIRST

for high speed wetting and rewetting

nekal *ws-21*

The new **Nekal WS-21** is designed to give maximum efficiency for both wetting and rewetting at all temperatures. What's more, this liquid form chemical has a pleasant odor and controlled foaming qualities.

Nekal WS-21, the **Wetting Agent**, will produce excellent results in such operations as:

★ High speed continuous dyeing.
★ Package and beam machine processing.
★ Resin finishing, sizing, desizing and bleaching.
★ Wetting in jigs, padders, reel machines and open tubs.

Nekal WS-21, the **Rewetting Agent**, makes textiles highly absorbent. It is used:

★ To give rewetting in sanforizing.
★ For rewetting prior to dyeing and printing.
★ For finishing purposes on cellulosic and animal fibers.

If a highly concentrated product is preferred, use **Nekal WS-25**, a liquid brand three times the strength of **Nekal WS-21.**

Write today for a circular on **Nekal WS-21** and **Nekal WS-25.**

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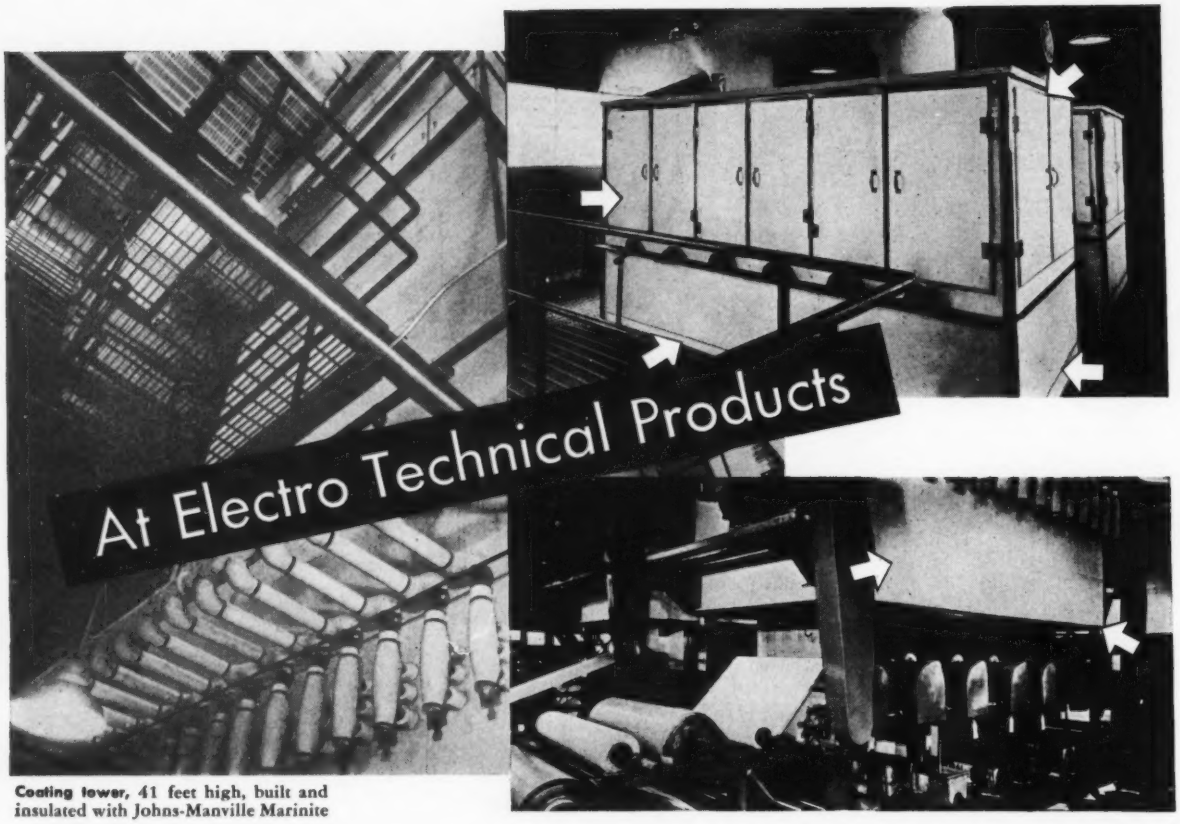
"From Research to Reality"



Coating tower, 41 feet high, built and insulated with Johns-Manville Marinite

"Production speeded...quality control improved"

with coating towers built of Marinite, the non-corroding, structural insulating material

When Electro Technical Products, a division of Sun Chemical Corp., built new coating towers with Johns-Manville Marinite*, they stepped up performance and reduced maintenance of their drying equipment.

The Company found: (1) Marinite speeds production because it provides more uniform heat. (2) Marinite improves quality control because temperatures can be maintained more accurately. (3) Marinite virtually eliminates maintenance because it does not rot or corrode.

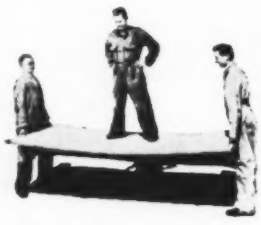
J-M Marinite is an asbestos material which combines structural strength with efficient thermal insulation. It offers many advantages for driers, ovens and other high temperature equipment.

Marinite simplifies construction because it builds and insulates in one operation. Marinite speeds production because it provides uniform heat and better heat control. Marinite reduces maintenance because it has almost unlimited service life. It does not rot or corrode . . . it does not disintegrate in water . . . it needs no protective facing for normal use. To learn how Marinite can improve your equipment, write Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay St., Toronto 1, Ont.

*Marinite is a registered Johns-Manville trade mark.

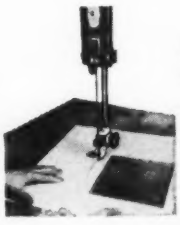
MARINITE builds and insulates in one operation

large sheets speed construction, afford maximum heat control



MARINITE is strong

provides structurally strong monolithic walls—requires minimum angle-iron framing



MARINITE is easily worked

may be cut, drilled, shaped with ordinary woodworking tools, by plant labor

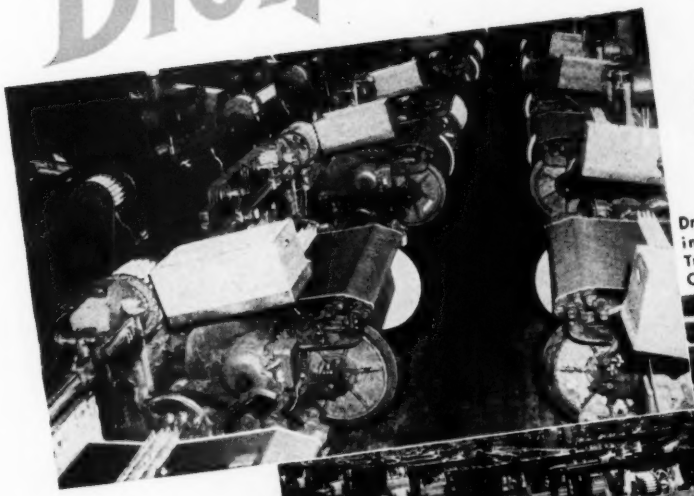
Johns-Manville *FIRST IN* INSULATION

MATERIALS · ENGINEERING · APPLICATION

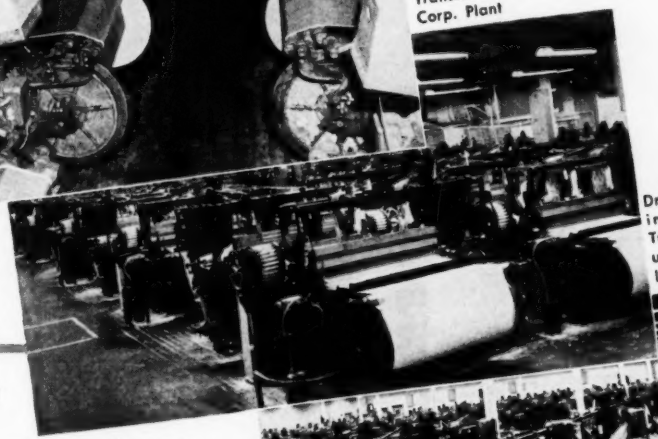
Diehl POWER TRANSMITTER

is assuring maximum weaving efficiency in leading mills

Thousands of Diehl Power Transmitters are operating DRAPER LOOMS in leading textile mills. Many have been in continuous operation for five years.



Draper X2 looms operating with Diehl Power Transmitters in Cone Mills Corp. Plant



Draper XD looms operating with Diehl Power Transmitters at Bibb Manufacturing Company, Columbus, Georgia.

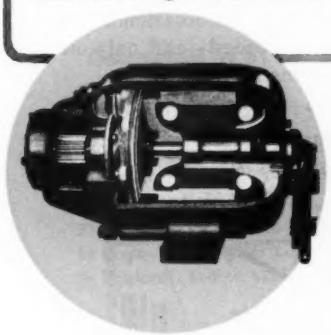
Draper XD looms operating with Diehl Power Transmitters at the Lyons Plant, Synthetic Division, M. Lowenstein and Sons.

MILL MEN ARE ENTHUSIASTIC ABOUT THESE FEATURES

- "Stored energy" for smooth, rapid starts and positive picking.
- Precision braking.
- Minimum fluctuations of speed and motor current.
- Lower power consumption.
- Lower motor heat losses.
- Eliminates current regeneration.
- Simplicity and ease of maintenance.

. . . all of which adds up to increased mill production, improved quality of cloth, lowered operating costs and long, trouble-free service.

We will welcome an opportunity to tell you—without obligation—how the Diehl Power Transmitter can bring these benefits to you.



This cutaway view illustrates the inverted construction of the power transmitter and shows the rotor which revolves around the outside of the stator on a hollow shaft—providing the essential inertia without the disadvantages of a separate fly wheel. Note the pinion driving shaft with attached clutch-plate which is shifted axially by simple lever at front end of motor, regulating clutch engagement pressure and providing controlled driving and braking action.

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

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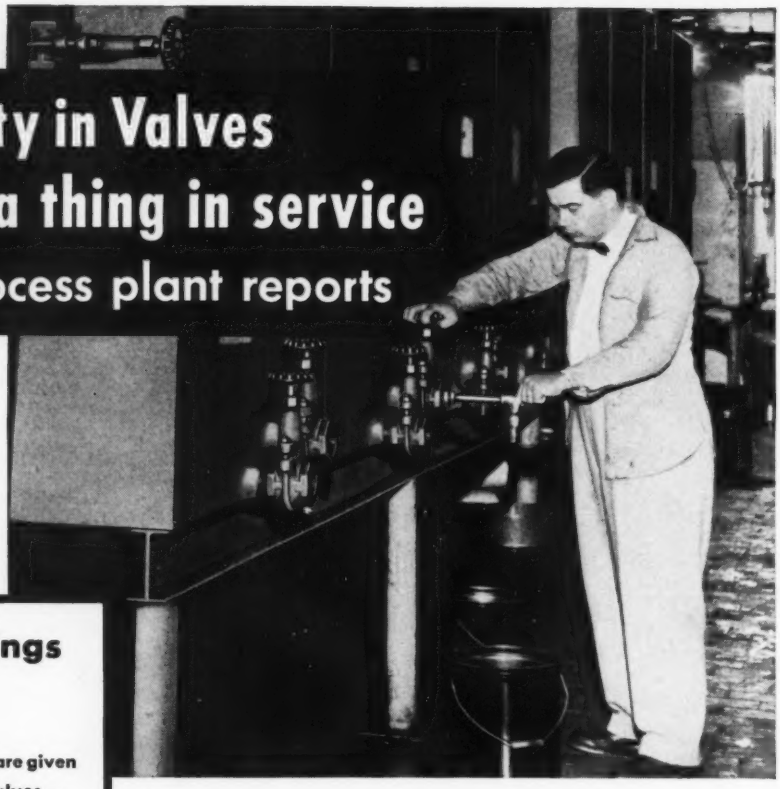
Similarity in Valves doesn't mean a thing in service

...Chicago process plant reports



The Installation

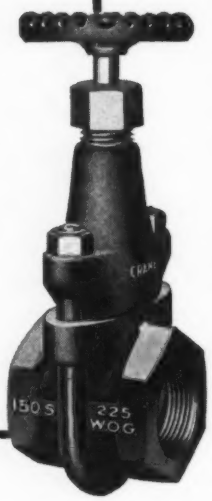
At Hysan Products Co., Chicago manufacturer of liquid waxes, pine oil and coal tar disinfectants, liquid soaps, insecticides and various chemical specialties—where Crane clamp gate valves have been installed on all process and storage piping.

Valve Service Ratings

SUITABILITY: Performance-proved
FEATURES: Tight seating
MAINTENANCE COST: Only routine care given
SERVICE LIFE: Many times former valves—still like new
OPERATING RESULTS: Costly loss and trouble stopped
AVAILABILITY: Crane Catalog item—No. 488

The Valve

Crane clamp gates are of rugged design, with seating surfaces machined to close tolerances. That's why they provide long-lasting, tight closure, even where operation is frequent and fluids are hard to hold. Many patterns to choose from in these compact valves—all iron or brass-trimmed. Consult your Crane Catalog or your Crane Representative.



The Case History

Longest service given by similar type valves formerly used was from 2 to 6 months. They failed to hold tight at seats and disc under daily operation of 3 to 12 cycles. Valve maintenance and replacements were excessively costly—as were down-time losses. Leaky valves on tank lines forced repeated transfer of storage stock. Up to 3 men were needed to make valve repairs.

Only when the plant switched to Crane No. 488 clamp gate valves was the trouble stopped. Installed more than a year ago, the valves show no sign of wear or leakage. Only an occasional pull-up on the packing nut is needed—and only one man for all piping maintenance.

What's the answer? Better quality valves, obviously—the only way to assure better service and lower ultimate cost.

THE BETTER QUALITY . . . BIGGER VALUE LINE . . . IN BRASS, IRON, STEEL

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VISQUEEN® film

Converters of VISQUEEN film can help you package better. For names, mail the coupon.

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Important: VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. VISQUEEN film is produced by process of U. S. Patents No. 2461975 and 2632206. Only VISQUEEN has the benefit of research and technical experience of The VISKING Corporation, pioneers in the development of pure polyethylene film.

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The VISKING Corporation, Box TW10-1410, Plastics Division, Terre Haute, Indiana

Send me names of converters of VISQUEEN film serving my area.

Name_____ Company_____

Address_____ City_____ Zone____ State_____

 For more information, write direct or use Reader Service post card.

TAPER-LOCK

A PATENTED PRODUCT OF DODGE

—OFF THE SHELF

NO REBORING!
NO KEYSEATING!
NO MACHINING!

Ready for the shaft, with no costly, time-consuming operations to make them fit. That's the big news about Dodge Taper-Lock Sprockets. Taper-Lock grips the shaft with the firmness of a shrunk-on fit, yet comes off easily. Bushings may be re-used. They come in sizes to meet most every application.

Taper-Lock Sprockets are available from Distributors' stocks in a complete range of B-type steel sprockets—½" through 2" pitch. Dodge quality Roller Chain is packaged in 10-foot lengths—also available in 50-foot and 100-foot reels. Save time—save money—keep production rolling—get Dodge Taper-Lock Sprockets and Roller Chain from your Dodge Distributor.

DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Ind.

CALL THE TRANSMISSIONEER, your local Dodge Distributor, for valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write us.

THERE'S ONLY ONE TAPER-LOCK, THE BUSHING THAT MOUNTS FLUSH!

Standardize, economize with Taper-Lock, the bushing that is interchangeable in Dodge sprockets; sheaves, couplings and conveyor pulleys. *More than 2,000,000 in use!*

DODGE

of Mishawaka, Ind.

REPELOTEX

. . . puts you on the inside of durable, profitable water repellency

Water repelling durability that is for all practical purposes permanent, is now available in the new, extremely efficient, silicone-based **REPELOTEX ST.** Almost all fibers, constructions and finishes can now be made water-repellent practically for the life of the fabric, *at a cost equal to or lower than ordinary non-siliconic treatment,* with **REPELOTEX ST.**

Defying even dry cleaning and laundry soaps, improving the strength properties of resin-treated fabrics, imparting greater sewability and a better hand, resistant to mark-off effects, spotting and staining, **REPELOTEX ST** offers every conceivable advantage, emphasized by an exceptional economy.

From the point of view of the processor, moreover, **REPELOTEX ST** offers extreme ease of formulation and application, is readily compatible with resin finishes, has no unpleasant odor either during finishing or after curing and requires no after-wash.

REPELOTEX ST has been proven in mill use after extensive plant trials—have it demonstrated in your mill. Write, wire or phone today.

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". . . remember all *my*

HIGH
BULK
YARN

must be from the Turbo Stapler"

When the repeat orders start you know you've got the right answer. And that's the way it's been with yarns processed from the Turbo Stapler. More and more knitters insist on this quality yarn—and here's why . . .

YARNS ARE SOFTER

- Fibers are *broken* by the Perlok System.
- More and softer fiber *ends.*
- Finer fibers.
- *All* fibers stretched.

YARNS HAVE MORE BULK

- Higher stretch ratio—higher contraction.
- Sturdy draw zone.
- Use of contact heat.
- Complete control of blend.

LOWER COSTS

- Start with less costly tow.
- Raw material savings average 7¢ per lb.
- Pre-roving costs lowered.
- Evener yarns with fewer doublings.

TIME PROVEN

- Two years of mill operation.
- Over 5,000,000 pounds produced.

These are some of the reasons why aggressive spinners are buying additional Staplers. Before you buy *any* machine, get all the facts—get the complete Turbo Story now. If you want to *see* what the Turbo Stapler can do, we'll be glad to arrange a demonstration.

The Turbo Stapler is licensed under Pat. No. 2419320

TURBO
SINCE 1929

TURBO MACHINE COMPANY, LANSDALE, PENNA., U. S. A.

Makers of Precision Hosiery Finishing Machines — Crimpers — Steam Setters

A MESSAGE TO AMERICAN INDUSTRY • ONE OF A SERIES

RESULTS OF AN INTELLECTUAL REVOLUTION . . .

"The Western Miracle" Continues . . . More Automatic Controls for Industry

Within recent weeks three new monthly technical magazines devoted to automatic control systems for industrial processes and machinery have offered the public their first issues. One of these is CONTROL ENGINEERING, a McGraw-Hill publication.

What has caused this surge of interest in the design and application of automatic control systems? What does it portend for the future of American industry? More important, what does it promise for the American standard of living, of which industry is and must be the servant? And what is the role of CONTROL ENGINEERING in this development? It is to those questions that this statement is addressed.

A New Intellectual Revolution

It is frequently asserted that we are now in the throes of a new industrial revolution. The revolution is described as the eliminating of wasteful applications of human labor to repetitive tasks through new technology which makes it possible to transfer those tasks to automatically controlled machinery.

It is perhaps more accurate, however, to say that we are the beneficiaries of a new intellectual revolution in the application of science to industry. This new intellectual revolution points the way toward giant strides in the continuing process of taking dull and laborious work off the backs and minds of men and transferring it to machines operating in large batteries under automatic control.

The practical engineering work required to convert this intellectual revolution into a full-scale industrial revolution, however, in large part still remains to be done. It is to this task that CONTROL ENGINEERING will be devoted. Its role is that of bridging the gap, in engineering and economic terms, between the new conceptions of automatic control of industrial processes and their practical workaday application. These conceptions run the full gamut from systems of control for automatic factories making heavy industrial products to highly personalized systems of automatic control to warn people when they are approaching the broiling point in sunning themselves at the beach or becoming too drowsy to drive their cars safely.

Enter the "Feed-Back" System

Enough work has been done to move these conceptions out of the realm of interesting dreams and into the realm of practical possibilities, and in some cases into the realm of practical realities. Crucial parts of this work were done during World War II when weapons were successfully equipped with "feed-back" systems

that automatically corrected mistakes made by the weapons in locating their targets.

The principle of the "feed-back" system is as ancient as the personal monitor that tells us not to run into each other as we walk along the street. It feeds back to our locomotion machinery the warning of a collision ahead. But the application of the principle to weapon control and then to more general machinery control required superlatively imaginative and skillful scientific development.

When a "feed-back" system that monitors an automatic process and keeps it lined up precisely is teamed up with a computing machine, capable of making lightning calculations that control both what goes into the process and what is done with the product, the horizons of automatic control become broad indeed. But in large part they still remain horizons. A vast range of practical engineering work remains to be done to realize anything like the full potential of automatic control of industrial processes and machinery.

More and Better Jobs

There are those who view the surge of interest in automatic control with alarm. They conjure up a situation in which automatic processes will at once expand the ranks of the unemployed and reduce many of those still working in industry to the status of robots or automatons.

A look at the record of the American economy — a record of amazing growth, steadily improving job opportunities and a constantly rising standard of living — demolishes the basis for such fears. The introduction of new and more efficient industrial machinery and processes obviously cannot be accomplished without creating some disturbance for some individuals and some companies. But consistently the longer range effect of such local and temporary disturbance has been more jobs and better jobs for Americans.

It is no accident that, while the proportion of industrial wage earners in our population is virtually the same as it was in 1920, the proportion of professional and salaried workers has doubled. The proportion of unskilled workers, furthermore, has dropped by half. This has been an essential part of a continuing process by which drudgery has been transferred to machines while the workers who formerly did the drudgery have been graduated to jobs calling for greater competence and providing better pay.

Higher Living Standard

A British historian, H. J. Hancock, has referred to this general process as "the Western miracle" — that of providing an ever higher and higher standard of living for more and more Americans. The key element in this miracle has been more and more reliance on power-driven machines to get the day's work done.

In the nature of the extremely complicated apparatus involved, full development of systems which have passed through the "think stage" into the status of practical possibilities will be a time-consuming process. It will also be a very exacting process, calling for a tremendous application of engineering skill and ingenuity. However, the engineers who are concentrating on this difficult, workaday phase of the development of apparatus for automatic control will be inspired by the knowledge that they are making a crucial contribution to technical progress which holds great promise of good for the American people.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C. McGraw

PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.

Textile World
October, 1954 • Vol. 104 - No. 10

What's Happening in HUMAN RELATIONS?

At the Southern Industrial-Relations Conference, discussions indicate that—

- **More companies are writing out policies**
- **Improving worker attitude is better than making attitude surveys**
- **Complaint systems give workers plenty of time and opportunity to correct faults**

By THOMAS B. WINSTON
Assistant Editor, TEXTILE WORLD

AN INFORMAL SURVEY at the Southern Industrial-Relations Conference held at Blue Ridge, N. C., showed that there has been a substantial increase in the number of companies with written policies. Typical policies covered include seniority, how it works, and what breaks it; leaves of absence; grievance procedures; wages and overtime provisions; employee loans; suspension; discharge; and right of appeal.

Most companies have published booklets with the written policies included. These booklets are usually presented to new employees when they are hired. A few companies require a signed statement that the booklet has been read; but one company, on checking up, discovered that a signed statement provided no guarantee that the booklet was actually read.

However, evidence indicates that booklets covering company policy are closely read by regular employees

when they are first issued. In several instances, written policies that appeared to conflict with policies of common understanding brought forth prompt requests for clarification from employees. These instances also indicated a need for the written policies.

Other Methods

Instead of a booklet issued to employees, a few companies issue company-policy looseleaf notebooks to supervisors. One company reported a preference for posting policies on bulletin boards, on the theory that policies should be available to people on the job.

Other methods used to communicate policies include house organs and management newsletters, which are becoming increasingly popular. Very few companies use group meetings of employees.

In general, the development of policies is left to higher echelons of management; but in the case of one company, a general policy is developed on every problem that causes trouble. The supervisor involved helps to develop the policy, and it must meet his approval before a policy sheet is circulated.

Attitudes of Workers

One company handbook was developed as the result of an attitude survey, which covered foremen first and then hourly paid workers. Attitude surveys are generally thought to be useful if the company intends to carry through after the survey is made; if not, a survey is a waste of time. Another essential to a successful survey is to guarantee the anonymity of responses.

Although not actually opposed to attitude surveys, several people expressed a reluctance to have an attitude survey made. "As long as you know of something that can be done to improve your industrial relations, it's better to do it before going into a survey."

Several speakers at Blue Ridge expressed the opinion that Southern workers, if treated right, are not easily lead into union membership. But to management people from unionized plants, this opinion seemed too generalized.

To mills facing an approaching union election, the advice was given that supervisors should carry on as usual without trying to judge the impact of every decision on the election results. Expanding personnel services as union activity increases and contracting the services as the activity decreases was held to hurt good industrial relations in the long run; however, this practice does not appear to be prevalent. The best way to keep a union out, if that is your aim, is to develop sound industrial relations practices and a good working atmosphere.

Upward Communications

Suggestions for encouraging upward communications were offered at Blue Ridge. In one company, the president of the company answers questions submitted to him by workers, and the questions and answers are published in the company newspaper.

Another company furnishes each supervisor with a card for keeping a record of informal conversations with each worker under his supervision. There is no timetable for these talks, and how long it takes to make a round depends on the size of his department; with 20 people under him, a supervisor would get around to everybody every three months or so.

The checklist gives each foreman a chance to be on speaking terms with all employees under him. The foreman is not required to follow the practice, but experience in the company has shown that supervisors who follow the practice have less trouble than supervisors who don't. After an informal talk, the supervisor marks his checklist with the date and subject, "Sept. 22. Talked about fishing."

Complaint System

The complaint system used by one company was described in detail. In this company, an open-door policy is in effect, and a worker can go over his supervisor's head or to the personnel department with his complaints. But unless the trouble is a personal problem, his immediate supervisor is brought in.

The heart of the method is a human-relations report. If a complaint is brought to the personnel department, the complaint is put down in writing and the worker is asked to go over the report to make sure his complaint is accurately recorded. Then the report is sent to the man's immediate supervisor, and the supervisor has a talk with the man. If the worker is not satisfied, he can then go back up the grievance line.

If the worker is suspected of trying to keep the complaint alive without justification, he is told so. The policy to cover this procedure is called "straight shooting."

The purpose of the complaint system is to make sure that all complaints are heard but to insure that the supervisor remains the manager of his department.

Warning Notice

To complement the complaint system, the company has a warning system for rule breakers. Warning notices are presented for minor offenses, major offenses, and intolerable offenses. The supervisor decides what to do in every case, and what he does depends on the worker's history. The supervisor is expected to make a thorough investigation before issuing a warning notice. The general practice followed by supervisors is to allow three minor notices, two major, and one intolerable. If a worker gets fired under this system, he knows why.

Any time a complaint shows the need for a policy, the supervisor involved is asked to help write the policy and the supervisor approves the policy before it is circulated.

Another feature of this company's human-relations program is its interest in rehabilitation. In one case, an alcoholic supervisor was paid hospital insurance for three months with the understanding that he had the three months to get himself straightened out. In this case, at the end of three months, the man was back on the job; and he is there today doing a good job.

An Old Mill Is Brought up to Date

By W. A. THOMASON, Jr.

September, 1950: Globe Mills, Mount Holly, N. C., bought a dilapidated mill at Lincolnton, N. C.

June, 1954: Four-year modernization completed.

▶ Here is the story of what was done to turn a white elephant into an economical, high-quality carded-yarn mill.

BUILDINGS WERE IN SUCH BAD repair that one of the first projects in the rebuilding program was to put the main mill building in top condition. A new insulated roof was put on, new flooring was laid down, and the building was completely rewired for lighting and power. New fluorescent lighting was installed. Rotted wooden platforms around the warehouse were replaced with new concrete platforms. New siding was put on the warehouses to replace old warped siding.

The old mill pond was abandoned and a new water tank built. A Bahnson humidifying system was installed in the spinning and winding room. Every house in the village was renovated and modernized.

Equipment Replaced

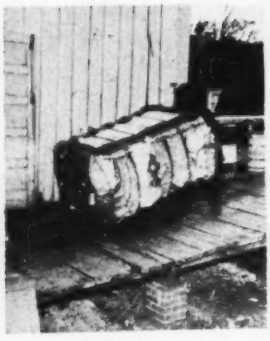
The mill had 14,200 spindles of spinning. Some of the frames were 50 years old, and half of them were 2¾- and 3-in. gauges. Twenty-eight new Whitin frames were bought to replace these narrow-gauge frames. The 28 remaining 3½-in.-gauge frames of later model were rebuilt. All spinning frames were equipped with Whitin or Watson & Desmond SKF antifriction spindles, tape drives with antifriction tape tensions, revolving top clearers, individual motor drives, and overhead cleaners. The traverse was lengthened from 7 to 9 ins.

In the card room, practically all the equipment is now new. The machinery includes: 11 Whitin 10x5 Interdraft slubbers with antifriction top rolls; 60 deliveries of Ideal drawing, eight ends up; 59 Whitin cards; and two Saco-Lowell pickers with a modern opening line.

THE OLD MILL

Mill pond

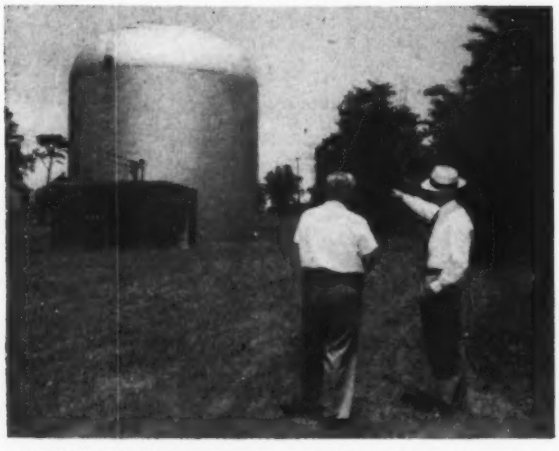
Dilapidated houses



Wooden platform

50-year-old cards

THE NEW MILL



WATER HANDLING was brought up to date with a system that includes good piping, good pumping facilities, and ample tank-storage capacity.

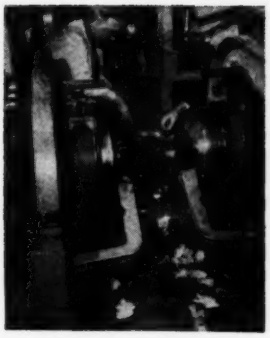
RENOVATED HOUSES have good foundations and new roofs, windows, screens, etc. A modern bathroom was installed. Houses are kept painted.

WAREHOUSE PLATFORM is now concrete, and bales of cotton are handled with a lift truck instead of by the old expensive hand-truck method.

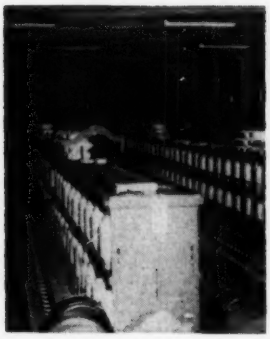
59 WHITIN CARDS replaced the 56 old cards of four makes. Abington system is used to strip the cards and convey waste. Clean, smooth floors help can handling.

THE OLD MILL

Obsolete roving



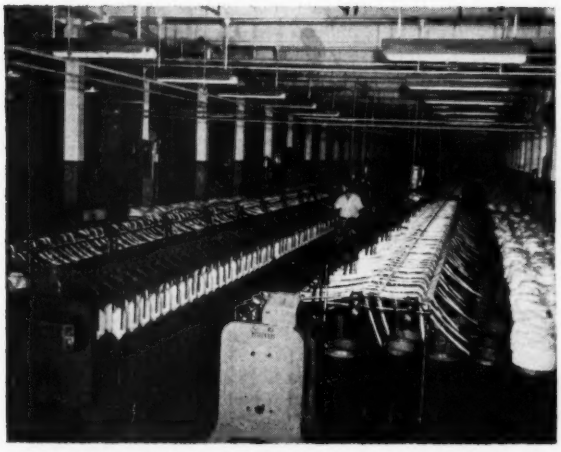
Band-drive spinning



Atomizers; spot lighting

Out-of-date winding

THE NEW MILL



NEW ROVING FRAMES are Whitin 10x5 Interdraft with antifriction top rolls. They replaced the obsolete three-process roving frames and helped bring costs down.

SPINNING FRAMES, some new, some rebuilt, have individual motors and Whitin's Casablancas drafting systems. Frames are arranged for roomy working conditions.

SPINNING ROOM now has row fluorescent lighting, Bahnson humidifying, and Parks-Cramer overhead frame cleaning. New floors and paint aid cleanliness.

WINDING was improved with large spinning packages, overhead cleaners, and good humidification and lighting. The Foster machines were already on hand.

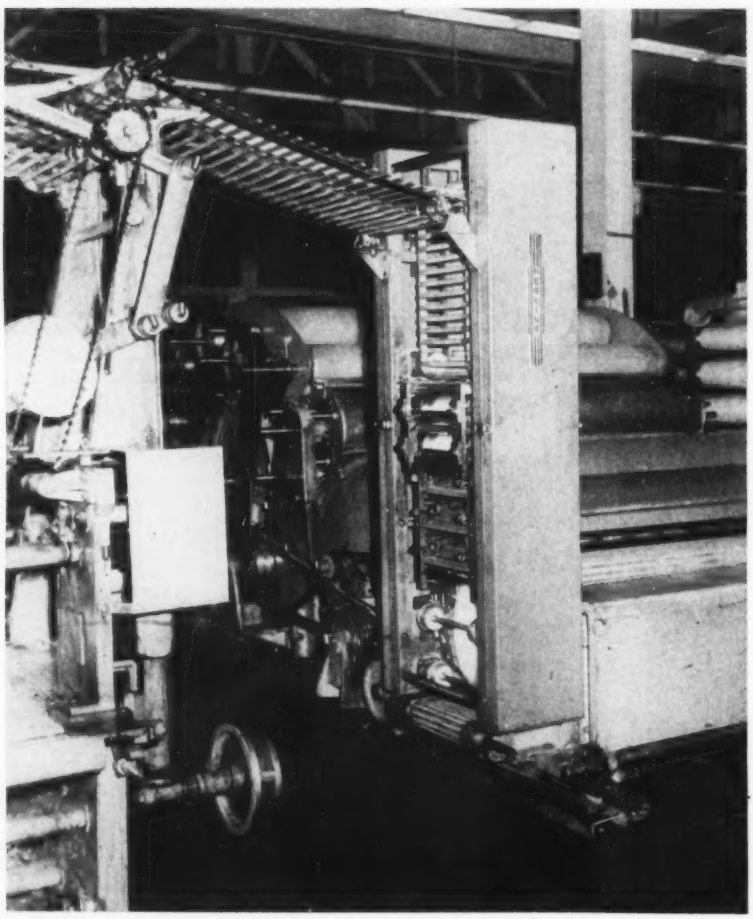
Forstmann Saves Money on Card STRIPPING and GRINDING

By GUSTAV ZELLNIK, Consulting Editor, TEXTILE WORLD

For fine wools and blends, Forstmann tried kneeless card clothing. Results have been—

- **Stripping cut 50%**
- **Grinding cut 66%**
- **More fly, but equal-quality yarn**

FORSTMANN WOOLEN Co., Garfield, N. J., is saving money on a two-year-old installation of kneeless card clothing for carding fine wools and blends for woolen-spun yarns. Labor savings have come from these changes:



THE WOOLEN CARD clothed with kneeless card clothing is used in making 4.5-run yarn of good quality and lower-than-normal unit cost.

1. Stripping has been cut over half. Where other cards on the same type of work are stripped every 50 hrs., the card clothed with Strip-O-Matic clothing runs over 100 hrs. between strippings. Some blends run on the card have run as long as 200 to 240 hrs. between strippings.

2. Grinding has been cut two-thirds. The normal card-grinding cycle at Forstmann is about every two months; but the card with the kneeless clothing runs six months between grindings.

Besides the labor saving in these reductions of stripping and grinding, Forstmann gets the additional advantages of not losing the production and waste normally associated with stripping and grinding.

Forstmann's Clothing

Forstmann describes the Strip-O-Matic clothing as about halfway between metallic and fillet clothing. It differs from metallic clothing in that it consists of individual wires set in a fabric base, as fillet clothing is. It differs from conventional fillet clothing in that it has no knee; each wire is straight and is set into the fabric base so that it extends from the base at about the same working angle as the face of fillet wire.

Forstmann attributes its decrease in grinding to the fact that the kneeless wire, larger and stronger than fillet wire, presents a more rigid working face to the fiber and is knocked off pitch less by fiber tufts. As a result, the working point of the wire is not dulled so quickly.

However, the gain in grinding and stripping time carries a disadvantage with it. Like metallic clothing, the Strip-O-Matic clothing causes more fly to drop under the card. But this fly, which would be imbedded in fillet clothing, does not approach the extra amount of stripping waste removed regularly from the cards clothed with fillet wire.

Yarn quality in the months that Forstmann has been running the clothing has been equal in all respects to similar yarn from fine wools and blends run on other card sets.

STA Unveils COTTON-MILL PRACTICES

Trends in selected carding, spinning, slashing, and weaving practices are revealed in a recent survey conducted by the Southern Textile Association. The results of the questionnaire sent to members are here classified by departments, and the information is summarized for easy, quick reading.

CARDING

▶ Of 18 mills reporting, three are running some synthetics and 15 are running only cotton.

▶ Fifteen of the mills use vacuum stripping, two use continuous strippers, and one strips by hand.

▶ Card production is 8 to 10 lbs. per hr. in 13 of the mills, whereas two mills card at 5 to 7, two at 12, and one at 14.8 lbs. per hr.

▶ Hours between grinding vary from 160 to 650 hrs., but eight of the mills grind every 240 to 280 hrs. One mill grinds on a random cycle.

▶ Life expectancy of cylinder and doffer clothing varies from 5 to 20 years, with five mills expecting 5 years, two mills 7 years, four mills 9 years, six mills 10 years, and one mill 20 years. All 18 mills agreed on 8 to 10 years of expected life for flats and lickerins.

▶ All the mills agree that production, grinding cycle, and type of fiber affect card-clothing life. Most of the mills agreed that the stripping system also affects the clothing.

▶ Among other points mentioned as reducing card-clothing life are:

- Clothing installed poorly
- Poor grinding
- Improper maintenance
- Close settings
- Lumpy laps
- Lap tails going through
- Worn bearings
- Oil on clothing
- Excessive humidity
- Migrating oil
- Incorrect roll weighting
- Insufficient roving traverse
- Buffing too deeply
- Buffing unmatched rolls
- Hard ends
- Spinner's knives
- Improper use of spinner's hook
- Wrong twist multiplier
- Dirty frames
- Incorrect humidity

SPINNING

▶ Seventeen of the 18 mills prefer synthetic cots, and the other mill prefers cork.

▶ Seven mills buff every 7 months, four every 12 months, two every 3 months, two every 4 months, one every 8 months, and another every 9 months.

▶ Here are some of the conditions that reduce cot life:

- Improper maintenance of buffing equipment

▶ How many quills should be used per year for each spindle? Seven mills figure two to three, two mills figure one to two, and two mills figure four quills per spindle per year.

▶ All the mills agree that warp bobbins are replaced at the rate of one-half to one bobbin per spindle per year. (One mill using aluminum warp bobbins hasn't replaced any in five years.)

The eight mills with the adapter-type spindle report that bolster life has been increased.

SLASHING

▶ Almost half the mills (8 out of 18) use wool-blanket coverings for slasher rolls. Four mills use rubber rolls at the back and wool-covered rolls at the front. Three mills use yarn-wound rolls, two mills use a wool-nylon wrap, and one mill uses rubber rolls entirely.

▶ Life of the wool-blanket-wound rolls varies from 120 to 536 hrs., but the average is about 350 hrs.

▶ Rubber rolls last two to three years, yarn-wound rolls six to seven months, and the wool-nylon combination 560 to 884 hrs.

▶ Here are some suggestions to increase life of slasher blankets:

- Use rubber rolls at the back.
- Try the wool-nylon blend.
- Use burlap on the back roll.
- Keep roll weight under 500 lbs.
- Use a good base cloth.
- Metallize with a $\frac{1}{8}$-in. layer of bronze.
- Break rolls in properly.
- Use care in removing laps.
- Boil and reuse blankets for 20% more life.

WEAVING

▶ Shuttle life varies from 1,440 to 5,000 hrs. in the mills reporting on this subject. Here is the breakdown:

E looms

- 160 to 163 ppm.—1,821 to 2,000 hrs.
- 172 ppm.—1,500 to 5,000 hrs.

X looms

- 148 ppm.—2,180 hrs.
- 170 ppm.—5,000 hrs.
- 182 ppm.—1,500 hrs.

X-2 looms

- 172 to 176 ppm.—1,440 to 1,925 hrs.
- 180 ppm.—3,536 hrs.

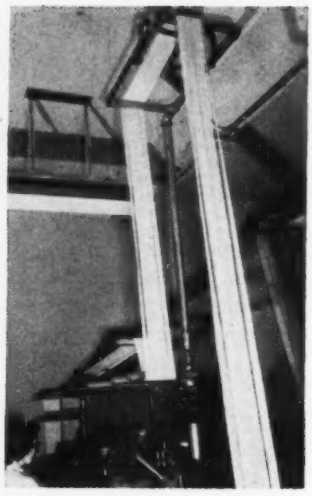
CONTINUED ON PAGE 196

Humanics — **A TW Brief**

"We" Indicates Good Attitude

A good indication of a worker's attitude is whether he says "they" or "we" in reference to the company. If he says "we," he probably has a positive, cooperative attitude and a healthy relationship with his supervisor. If he says "they," he probably doesn't feel a part of the company. For a worker to say "we" instead of "they," according to Dr. J. R. Rees, he must feel that:

1. **His job is worthwhile.**
2. **He is competent to do the job.**
3. **He is an accepted member of his work group.**
4. **He has good leadership.**



TURBO STAPLING is the first operation. Feed on 3.0-den. Orlon is 312,000-den. tow, and delivery is 90 lbs. per hr. of 83-grains-per-yard sliver. After this operation, 3.0-den. is reduced to about 2.0-den. Stretch ratio is 1.48, and draft is 4.22. Note the tensioning arrangement built by the mill and the louvered, aluminum cans that hold the stock in the automatic steam-relaxing box. Relaxing reduces 3.0-den. stock to 2.25-den.

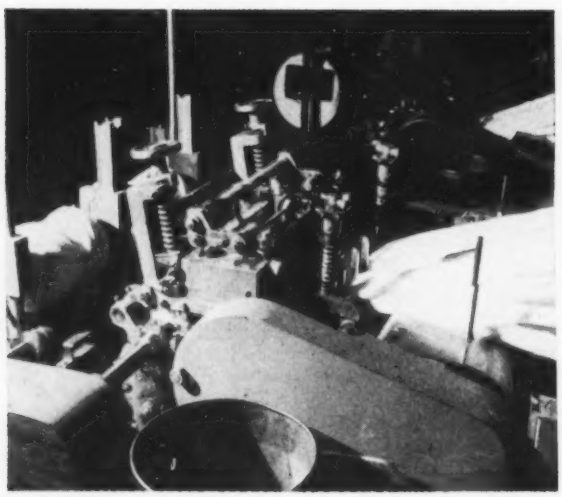
Here's the Story on Spinning

▶ From tow to yarn, it's nine operations (including relaxing) at Delaware Mills, Inc., originators and first producers of high-bulk-Orlon yarns.

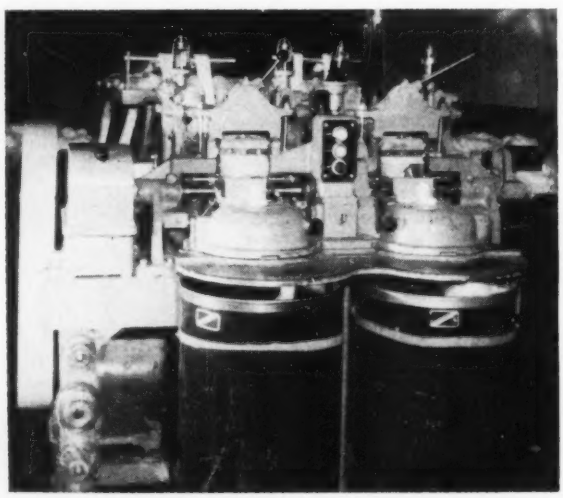
By JAMES H. KENNEDY
Managing Editor, TEXTILE WORLD

PIONEERING IN THE FIELD of bulked-Orlon yarns from tow has taught Delaware Mills, Inc., New Castle, Del., a lot about this relatively new concept of yarn manufacture.

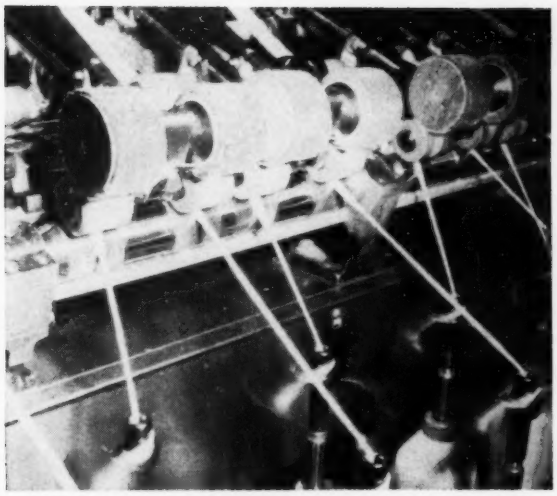
Here's the theory: Orlon tow can be stretched, broken, and relaxed to give the resultant yarns a cashmere-like hand ["How Champlain Handles Orlon Tow," TW, April, '54, p. 74]. Another effect can be achieved by stretching and breaking the tow, relaxing only half of it (or whatever percentage you want) prior to spinning the yarn and knitting a fabric, and then relaxing the remaining fibers in dyeing. The fibers that relax in dyeing bulk up the fibers that have already been relaxed, and the yarn becomes quite lofty as it rests in the



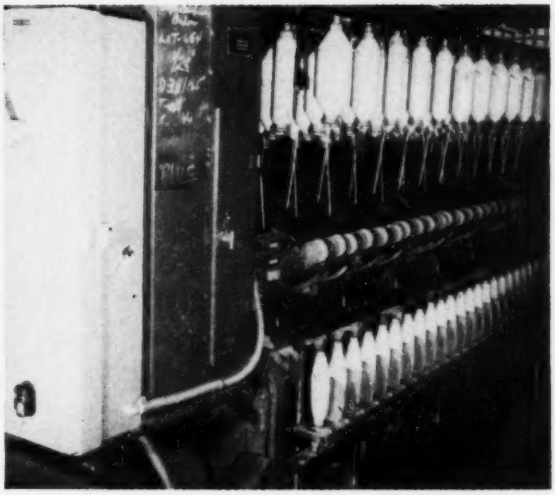
INTERSECTING GILLING follows an operation of open drawing. Delaware Mills has four of these Holdsworth gill boxes with balling heads. Pinning is coarse, about 8 to 10 per inch.



PIN DRAFTING, of which there are three operations, is done on four duals and four quads, all Warner & Swasey. The cans are all matched for weight, and balanced weights of stock are fed.



ROVING is made on Saco-Lowell F-5 frames. There are three 76-spindle frames and one 48-spindle frame. Roving bobbins are 10x5. The mill has encountered no trouble with static at any process.



SPINNING is also new—Saco-Lowell SS-4. The eight 200-spindle frames are equipped with Pneumafil. All roving is double-creeled. Delaware spins 14s to 30s worsted-type yarns of high-bulk Orlon.

HIGH-BULK-ORLON Yarns

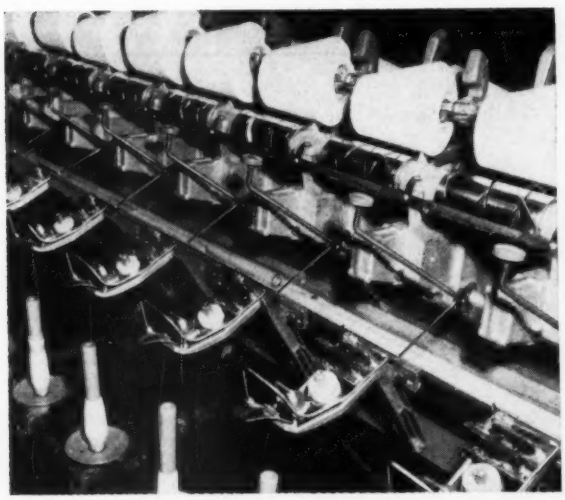
garment. So far, most such yarns have gone into sweaters said to have a nice hand and to be washable.

How Delaware Mills Does It

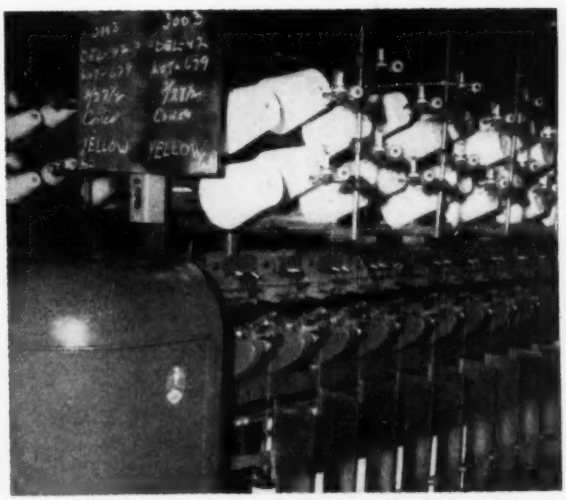
The machinery layout at Delaware Mills, Inc., which is 100% on high-bulk yarns, is as follows:

1. Turbo stapling
2. Relaxing
3. Open drawing
4. Intersecting gilling
5. Pin drafting
6. Pin drafting
7. Pin drafting
8. Roving
9. Spinning
10. Coning
11. Twisting
12. Coning

Details are given in the picture captions. Delaware Mills has three Turbo Staplers and a Pacific Converter with stretching attachment. Experimental work is being conducted on various blends of broken and cut tow, relaxed and unrelaxed, to attain specific end-use qualities. Average staple length is 6 ins., but Delaware uses a wide range of staple lengths.

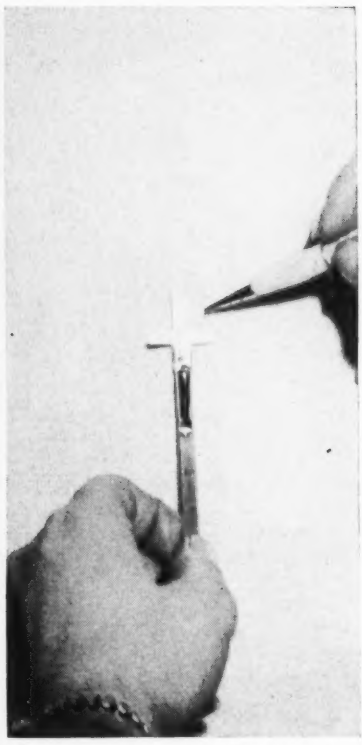


CONING is done on Universal Roto-Coners with no special attachments and at standard speeds. There are 120 spindles devoted to this single-yarn coning.



TWISTING on the four Atwood No. 10 frames of 100 spindles each is also a conventional operation. Frames are 7-in. gauge and have 4½-in. Herr rings.

A THREE-SIDED RACK underneath the machine catches the fabric to keep it clean and to make handling easier.



STITCHES are counted each hour to keep garment lengths even. A light inside the fabric helps the check.

Knitting

To make sweaters with a fine soft hand—

- **Knit with a slack stitch**
- **Use a fine yarn**
- **Relieve drag on yarn**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

KNITTING HIGH-BULK ORLON presented some problems to Barringer Knitting Mills, Philadelphia, Pa. The mill's technicians worked in close collaboration with Du Pont technicians, and the result is a sweater with a fine, soft hand.

Here's what they found gave the best results:

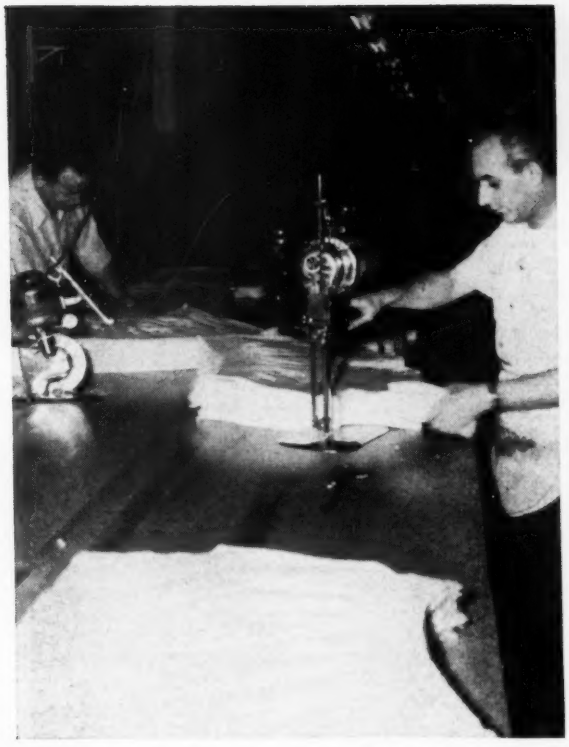
Yarn numbers that are finer than those usually used for sweaters make satisfactory garments. Ten-cut jacquard T J machines use 2/26s yarn, with 10 stitches per inch.

To maintain constant-length sweaters and an even stitch, the fabric is checked every hour. The courses per inch are counted while the fabric is under tension. The counting of stitches is always done opposite the take-up drive shaft to insure exact results.

Fabric Light Aids Check

A light suspended inside the fabric and supplied by current from a cord threaded through the dial shaft helps the knitter in checking fabric appearance.

The yarn path from the cone to the needles must be free from excessive drag. Porcelains are used where the



CUTTING is done with circular and straight-edge knives. Several dozen sweaters are cut at one time. Each piece is examined before cutting.

LOOPING neckbands gives a smooth, neat appearance. Trim yarns are used on the Model P looping machines to prevent mismatched necks and bodies.

Techniques for High-Bulk-Orlon SWEATERS

yarns must run over a surface, and they are kept clean by blowing them with an air hose three times each shift. To prevent specks of foreign color in the fabric, the machines are also cleaned down at each color change.

A galvanized tray underneath each bottom ring holds broken needles, ends of yarn, and other trash to keep the machine and the floor tidy.

The knitting-room floor is made from 12-in. asphalt-tile blocks and is kept clean, but the fabric falls from the machine onto mill-made racks. These racks have three sides, and they are pulled from underneath the knitting machine when the order is completed.

Dyeing Changes Hand

After knitting, the garments have a scroopy hand; but during dyeing, the unrelaxed fibers change and the scroopy hand is replaced by a soft, silky hand. The fabric acquires a bulky and lofty appearance.

When the garments are returned from the dyehouse, they are separated and examined. Each garment is then pressed on a single-bed press to retain the bulky effect.

Each piece is again examined during laying up for the cutting operation. The layers of cloth are up to 15 ins. high, and circular and straight knives are used for cutting the sweater shapes.

A pin ticket is clipped to each garment after cutting to prevent mixing garments. The pin tickets are printed on a small machine in the cutting room and indicate the customer, size, color, style, and lot number. The garments are shipped with these tickets, and the tickets are not removed in the mill.

Neckbands for the sweaters are made in 1x1 rib on Dubied VV and VD machines. All neckbands are looped on Model-P loopers to give a smooth, neat appearance. To make sure looping yarns match, the yarn that remains after the neckband knitting operation goes with the cut goods to the looping department.

Dyeing Wool-Synthetics Blends

Dyeing procedures and types of dyes used depend on blend percentages and shades desired. Methods include---

- **Bringing only the wool up to full shade in a blend where the synthetic is buried in the fabric**
- **Getting two-tone effects by dyeing wool-Dacron blends with chrome, metal-complex, or metallized dyes**
- **Relustering Dynel in a blend by loop drying the fabric at 275 to 300° F.**

By HENRY D. GRIMES, Consulting Editor, TEXTILE WORLD

WHEN FABRICS CONTAINING WOOL and synthetic fibers are wet-finished, the wool tends to rise to the fabric surface and the synthetics to become buried in the fabric. This shift occurs mostly in the fulling and scouring operations.

The absorption of the synthetic fibers within the fabric frequently can be used to advantage. For example, it is difficult to dye the wool and synthetic fibers with equal tone and depth of shade. However, if the synthetic-fiber content is less than 25% of the blend, the shade of the finished piece will be practically the same as the shade of the wool; and the difficulties of exact matching are avoided.

In some wool-synthetics flannels, the soft wool nap sometimes wears away in parts of the garment that are subjected to heavy wear; and the resulting shade contrast between the wool and the synthetic fiber causes the garment to appear badly worn. This contrast is particularly noticeable in a blend where the wool is dyed dark and the synthetic fiber is white or a light shade.

Wool-Nylon

It has been found practical to dye nylon-wool blends with any of a number of dyestuffs. For example, some women's-wear shades have been produced with ordinary acid dyes and direct-dyeing wool colors together with Glauber's salt, ammonium sulfate, or acetic acid. In men's-wear fabrics, the use of chromate dyes for lighter shades and top-chrome formulas for heavier shades has been successful. In addition to these dyes, a limited number of metallized colors may be used; but among this group, there are relatively few colors that produce the same depth of shade on both the wool and the nylon.

The metal-complex dyestuffs are another source of colors that give good shade uniformity between nylon and wool. This group includes Capracyls, Irgalans, Cibalans, Nylofasts, Lanasyns, and Supralans.

In dyeing light and medium shades on worsted piece goods that contain 5 to 15% nylon where the nylon is fairly well buried in the wool fabric, most of the ordinary chromate dyeing formulas on 100% worsted, slightly modified, can be used with good results. Darker solid shades require a reasonably good balance between the wool and the nylon.

Wool-Dacron

One problem in dyeing Dacron is the fact that there is a limit to the absorption of certain acetate dyestuffs on the fiber. This condition, known as blocking off, occurs when the Dacron has been dyed to a depth normally produced by ½ to 1% dye based on the weight of the fiber. At this point, a heavier shade cannot be produced even by using a more concentrated dyebath. For example, sometimes in attempting to dye a full shade of brown, it may be difficult to find a red dye that will be absorbed sufficiently to produce the desired shade.

Dacron top in blends approximating 50% can be dyed by a combination of acetate colors with swelling agents plus suitable direct-dyeing wool colors, metal-complex colors, or chrome colors for the wool. However, a considerable amount of the acetate color may go into the wool, especially in some of the heavier shades, and pro-

duce a fabric that will crock. It is therefore essential to select acetate dyes that stain wool the least.

A few of the dyes recommended are Latyl Violet B, Latyl Brilliant Blue 2G, Latyl Orange R, Celanthrene Cerise B, Acetamine Fast Yellow 4RL, and Celliton Fast Pink RF.

Du Pont suggests the following procedure for piece-dyeing wool-Dacron blends:

1. Wet out fabric with 1% Emulphor ON or 1% Duponol RA surface-active agent.

2. Dissolve completely 5 gms. per liter of Dowicide A (sodium orthophenyl phenol) and 0.2 gm. per liter of caustic soda, and add the solution to the beck at 110 to 120° F. Solution must not be exposed to acid vapors.

3. As soon as Dowicide A solution is well mixed—not more than 15 mins.—add dilute acetic acid (not stronger than 10%) over a 15-min. period to lower the pH to 5 to 6. Use of an add tank is desirable.

(Operations 1, 2, and 3 should be carried out with the beck closed.)

4. After the addition of the acid, do not circulate this fabric more than 10 to 15 mins. before the dyes are added. The disperse dyes should be pasted with 0.5% Duponol RA surface-active agent. Add the wool dyes made up in the usual way.

5. Raise temperature to the boiling point over a 30- to 45-min. period, and hold at 212° F. for 2 hrs.

6. Reduce the temperature to 180° F., and add 1½% acetic acid and 1% sodium bichromate. Raise the temperature to 212° F. and hold for 45 mins.

7. Scour for 15 mins. with 2% Duponol RA surface-active agent.

It is sometimes best to add all the Dowicide A slowly to the acid bath at the boil. In this way, a saturated solution would be avoided because the solubility of the carrier in the fiber and bath is great enough at the boil to prevent an insoluble phase.

This technique would eliminate the possibility of oil spots. Unfortunately, the wool is stained slightly more by such a procedure. Excessive amounts of dispersing agent should be avoided. For example, 1% Emulphor ON or Duponol RA is recommended. Emulphor ON lessens wool staining and promotes some retarding action, and it thus leads to more-level dyeings.

Formula for Navy Blue (Du Pont method)

8.0% Laytl Violet B
2.0% Latyl Brilliant Blue 2G
0.2% Celliton Fast Yellow 4RL Conc.
1.0% Brilliant Alizarine Milling Blue BL
0.2% Erio Chrome Red B
0.2% Erio Chrome Brilliant Violet B Ex.
0.25% Pontachrome Blue Black RM Conc.

In a modification of this procedure recommended by Du Pont, the Dacron is first dyed with the original procedure used through Step 4. After the Dacron has been dyed the desired shade, the goods are rinsed and the wool is dyed in a fresh bath with direct-dyeing colors or metal-complex colors. Swatches of 100% Dacron stock or fabric attached to the goods should serve as guides to bring the Dacron to shade. At least 2 hrs. boiling time is advisable to insure level dyeing. Additions can be made safely.

Formula for Brown (modified method)

First, the Dacron is dyed as follows:
1.8% Acetamine Fast Yellow 4RL
1.0% Latyl Violet B
1.0% Celliton Fast Pink RF
1.2% Latyl Brilliant Blue 2 G
Boil 2 hrs. or more.
Rinse thoroughly, and add:
2% Duponol D Paste
Boil 15 mins. and rinse.
Then, the wool is dyed in a fresh bath as follows:
2.0% Irgalan Brown 3BL
0.5% Irgalan Olive GL
Boil until the wool is up to shade.

Following the dyeing of piece goods, a boil-off with combinations of detergents in water to remove as much loose dyestuff as possible from the fabric is necessary to assure cleanliness and an even shade.

With suitable color combinations, both methods can produce two-tone effects. Patterns, such as checks and sharkskins, can be formed by leaving the Dacron white and dyeing the wool by conventional chrome, metal-complex, or metallized dyes.

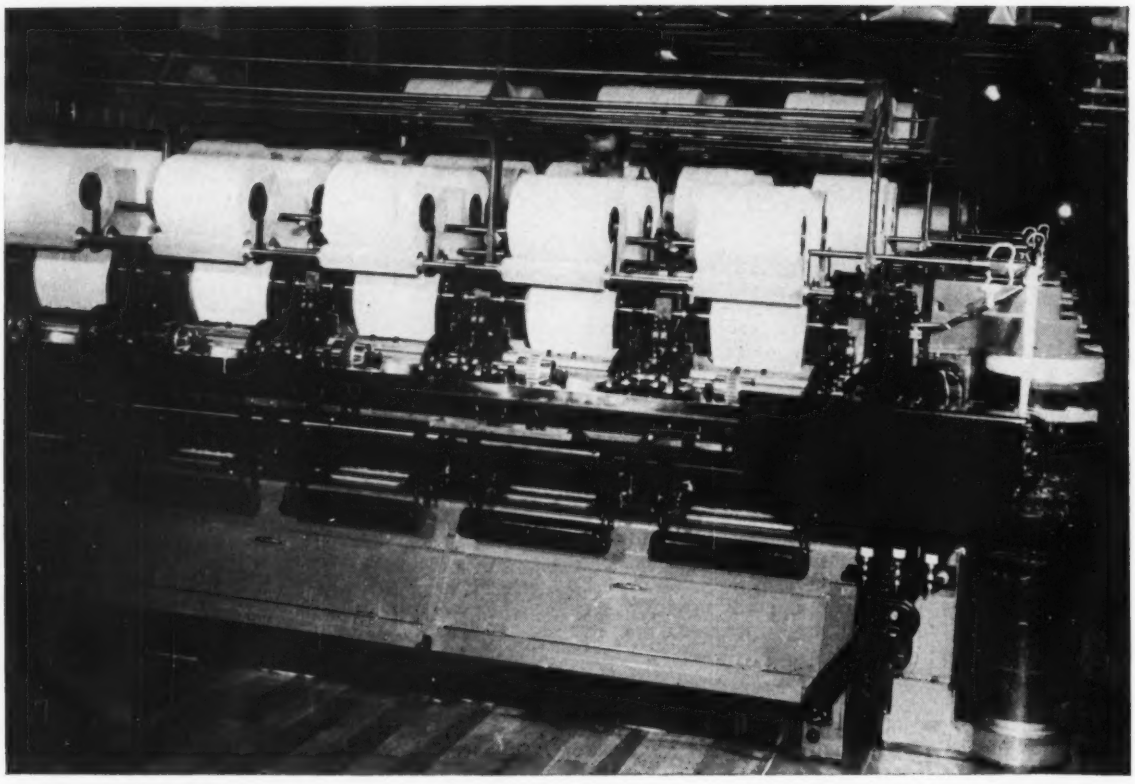
Wool-Dynel

Wool-Dynel blends can be dyed with the metal-complex colors for light to medium shades and with acetate dyes for the heavier shades. Peregal TW helps to retard the absorption of acetate dyes by the wool. The wool should be dyed with direct-dyeing wool colors. A thorough washing with a synthetic detergent following dyeing helps clear the fibers of loose, unfixed dyes and improves the crocking fastness of the heavier shades.

Semidecating for 2 to 5 mins. helps reluster the Dynel in the blend and improves the fabric hand. Loop drying at 275 to 300° F. does an excellent relustering job. Although such temperatures are excessive for 100% Dynel fabrics, they are permissible in blends.

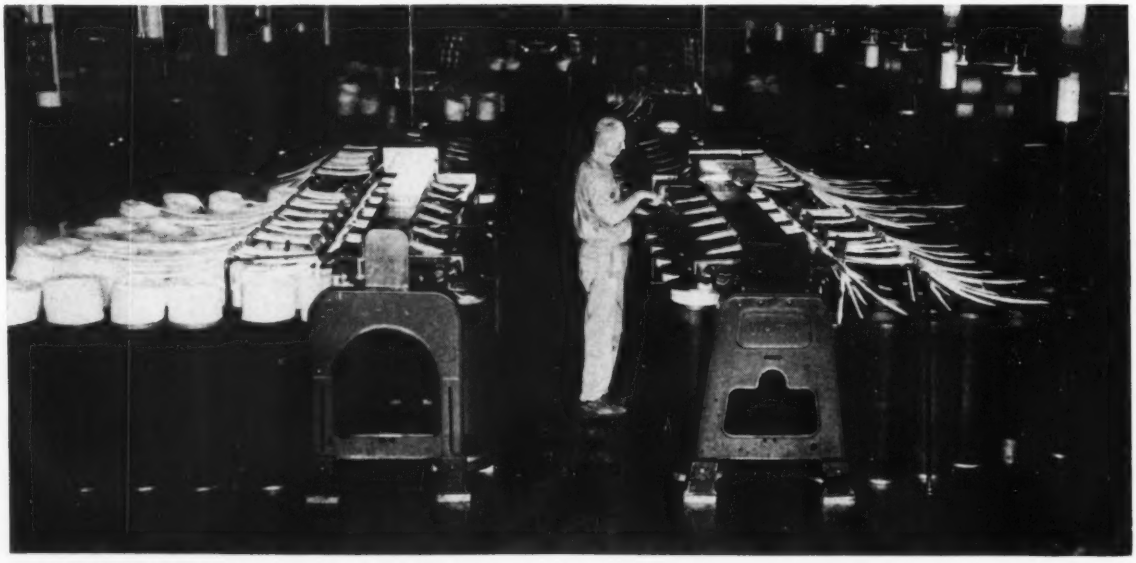
The wool carbonizing process is an effective way to reluster stock-dyed Dynel. It eliminates the need to reluster in the dye kettle with large amounts of salt or high temperatures.

Based on a paper presented at the Fourth Canadian Textile Seminar, September, 1954. The paper will be concluded in the November issue of TEXTILE WORLD.

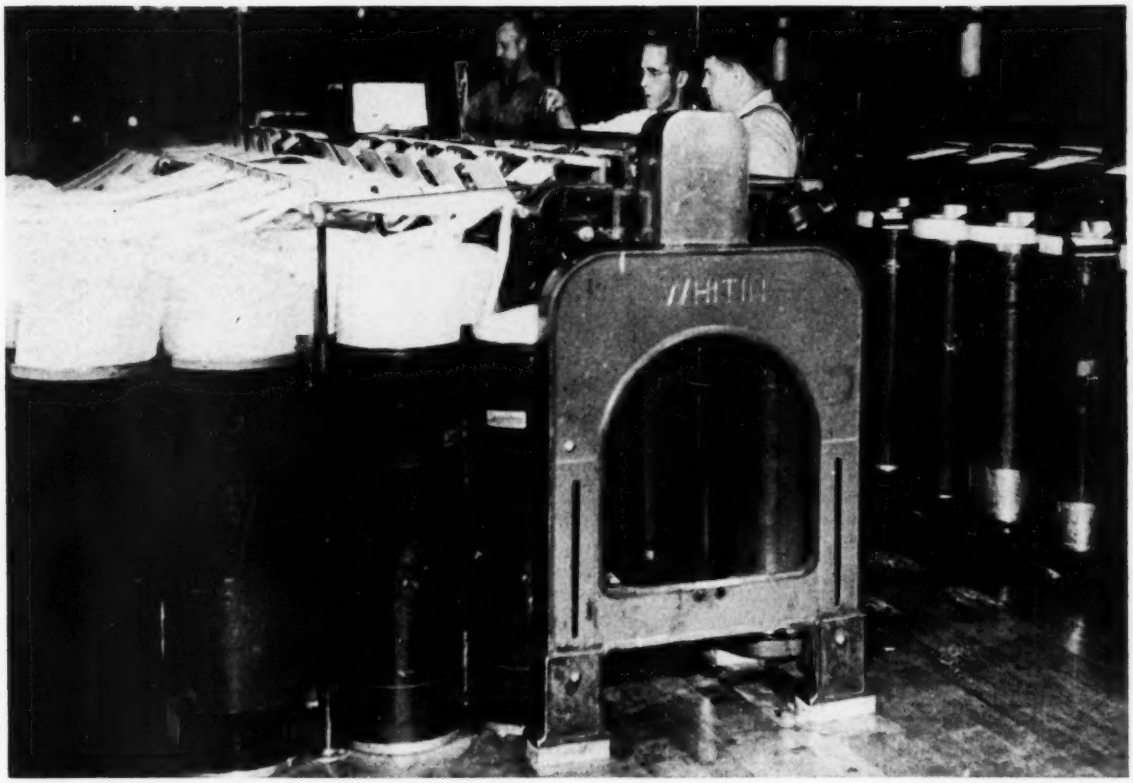


COMBER production is 40 to 48 lbs. per hr. The mill enclosed the underside of the combers, with doors hinged at the bottom for easy removal of the noil. The combers run at 100 nips per minute and remove 14% noil.

How A. M. Smyre COMBS COTTON



THE CARD ROOM is divided into two units, each having six Saco-Lowell combers with the necessary cards, drawing, and roving. In this way, two different cottons can be run at the same time without getting mixed.



IDEAL PREPARATORY DRAWING runs at a high draft to make 39-gr. sliver from 52-gr. card sliver, eight ends up. The speed averages 185 ft. per min. Five-roll drawing that follows combing runs at 133 ft. per min.

▶Almost every mill has a different idea on how to comb cotton. A. M. Smyre Mfg. Co., Ranlo, N. C., uses the principle of a light lap and slow speed. Production of the comber and drawing units are varied according to need, with high quality as the main consideration.

By W. A. THOMASON, Jr.

TWO VERSATILE, high-production combing units that produce top-quality work are located in both No. 1 and 2 Mills at A. M. Smyre Mfg. Co. In each mill, the layout is basically the same. The middle of the card room marks the division of the two units.

A complete unit is on each side. Each unit consists of 21 deliveries of Ideal preparatory drawing; one 10½-in. Saco-Lowell lap winder, 20 ends up; six Saco-Lowell combers; one 9-in. Saco-Lowell lap winder, 16 ends up; and 14 deliveries of Saco-Lowell five-roll, lap-back drawing.

Each unit is balanced with the cards and roving frames to furnish enough roving to the spinning room. The yarn numbers range from 16s to 30s. All yarns in No. 1 Mill are combed singles knitting yarns. No. 2 Mill makes single and ply combed knitting and weaving yarns. The average numbers vary somewhat, and production from the combing units varies according to the needs of the spinning room.

General Superintendent D. Hunter Cauble and Superintendent Lester Whitener believe in combing a light-weight lap at slow speed. The lap weight will vary with production requirements, but they keep it under 800 grains per yard.

One Typical Setup

The cards deliver a 52-gr. sliver. A 39-gr. sliver is made on the preparatory drawing with eight ends up. This arrangement gives a draft of 13.33. The mill does not strive for uniformity at this stage; it wants the fibers drawn out and straight but the sliver choppy. The front roll is running at a speed to give 185 ft. per min. The 10½-in. lap winder, with 20 ends up, makes a 750-gr. comber lap.

The combers run at 100 nips per minute, remove 14% noil, and produce 50-gr. sliver. Production with this setup is about 40 lbs. per hr., net. The 9-in. lap winders, with 16 ends up, make a 768-gr. lap.

The five-roll lap-back drawing drafts about 16 and produces 50-gr. sliver. The speed here is 133 ft. per min. All the deliveries have regular cushion top rolls; however, the mill is trying out several deliveries with ball-bearing metallic rolls.

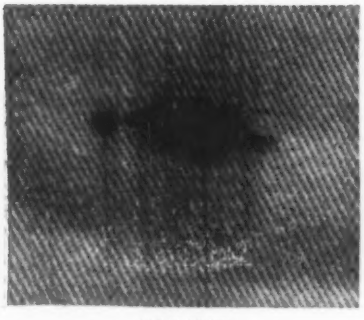
All sliver is run on Saco-Lowell 10x5 FS-2 roving frames. All spinning is Whitin Casablancas except 20 frames of Saco-Lowell Gwaltney.

Both mills have Bahnson air-wash systems. No. 1 Mill, however, is having refrigeration and electrostatic air filters installed, both in the card and spinning rooms.

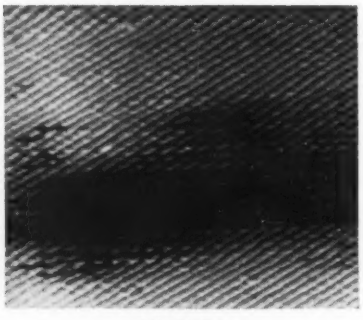
A complete quality-control program, headed by Garron Gordon, gives Smyre assurance of uniformly high-grade yarn. Stock is checked regularly at all stages of processing. The final test is how the yarn looks on the drum, and here it is consistently Grade A.

DO . . . have clean-off men cover looms before they blow off.

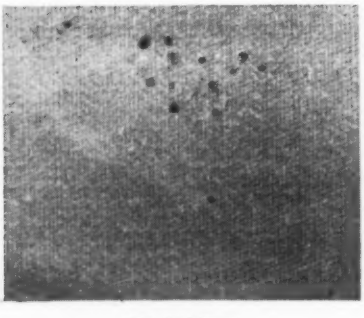
How To Reduce



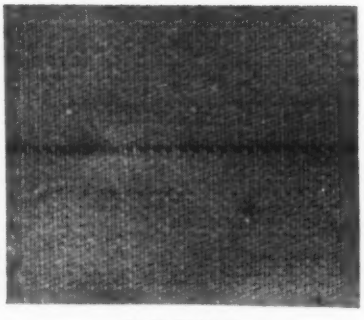
OILY SLUB



OIL SMEAR



OIL SPATTER



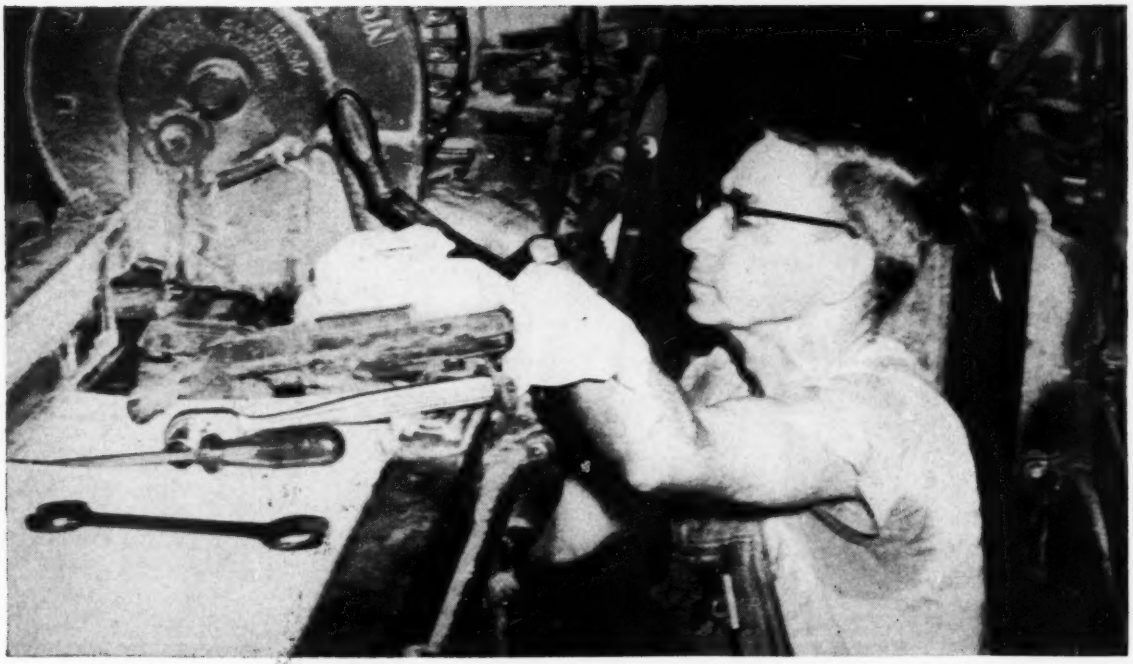
OILY FILLING

▶Most oil stains are caused by the carelessness of workers. To reduce them, check the machine parts contributing to the stains and teach employees how to avoid the defects.

By W. C. WESTBROOK
Consulting Editor, TEXTILE WORLD

OIL AND GREASE STAINS are not considered major defects in many types of cotton cloth. Although most of these stains are removed or reduced in the finishing process, it is better to treat them as preventable defects at all times. If all defects are kept to the lowest number consistent with profitable production, regardless of the type of fabric being woven, it usually is not necessary to retrain personnel when looms are changed to a higher-quality cloth.

There are many sources of oil and grease stains in fabrics, but they can be loosely classed in these three groups:



DON'T . . . let loomfixers place dirty tools on the cloth.

OIL STAINS in Cloth

1. Single-end stains of warp or filling yarn
2. Woven-in oil and grease stains
3. Oil and grease smeared or spilled on the cloth after it is woven

Stains Caused by Single Ends

Single-end oil stains are usually caused during the carding or spinning of the yarn and consist of a single end of yarn that has absorbed enough oil or grease to discolor it. Sometimes an oily slub or gout spun in the yarn smears adjacent ends in slashing or weaving. If the discolored end is solid brown, black, or yellow, the oil was probably from an overlubricated back-stand or roll bearing on the spinning frame. If the end has a striped appearance, the oil or grease probably was on one end of roving creeled double in the spinning frame; or it might possibly have come from the drawing frame.

Sometimes a single end of warp yarn will be saturated with oil from a roll bearing during slashing or weaving, and oily slubs may get on the yarn in the weave room. This material is usually a piece of waste or lint that has been saturated with oil and is blown onto, or falls onto, the yarn and is then beaten into the cloth. Such imperfections originating in slashing or weaving are merely stuck to the yarn, while those from spinning are twisted into the yarn.

An alert weaver can see many of the discolored ends and slubs and remove them before they are woven in. The batteryhands should be taught to discard any filling containing slubs, gouts, or stains, although not many of these defects show on the outside of the bobbin.

Why Stains Are Woven In

Some of the woven-in stains get on the warp yarn on the warpers, slashers, or in transit. Usually a dry stain, one that does not smear during weaving, is already on the yarn before it reaches the weaving department.

There are many sources of oil and grease stains on a loom. Many of the bearings and brackets are lubricated by oil dropped into an open hole, and uncovered gears and cams are lubricated by grease wiped on the surface. Some of this lubricant is spilled on the warp, filling, or cloth when the loom is lubricated; some drips or is slung onto the yarn or cloth during the various movements of the loom; and some is blown onto the material during routine machine cleaning.

There are numerous ways that oil or grease can get on the warp or filling yarn in the weaving department. Among them are:

1. Filling that is dropped on a lubricated loom part or into a spot of oil or grease on the floor
2. Leaking oil or grease from the battery-hopper journal
3. Filling yarn that has been placed in boxes or trucks that have been used to haul loom parts and scrap
4. Loomfixers or oilers spilling oil when looms are lubricated
5. Oil or grease slung from the friction gear or the crankshaft gear when guards are inadequate or have been removed
6. Oil blown from open oil holes when the loom is cleaned with compressed air
7. Oil, grease, tallow, graphite, or other lubricant dripping from the harness-sheave bearings.
8. Oil or grease spilled onto a warp truck or dolly

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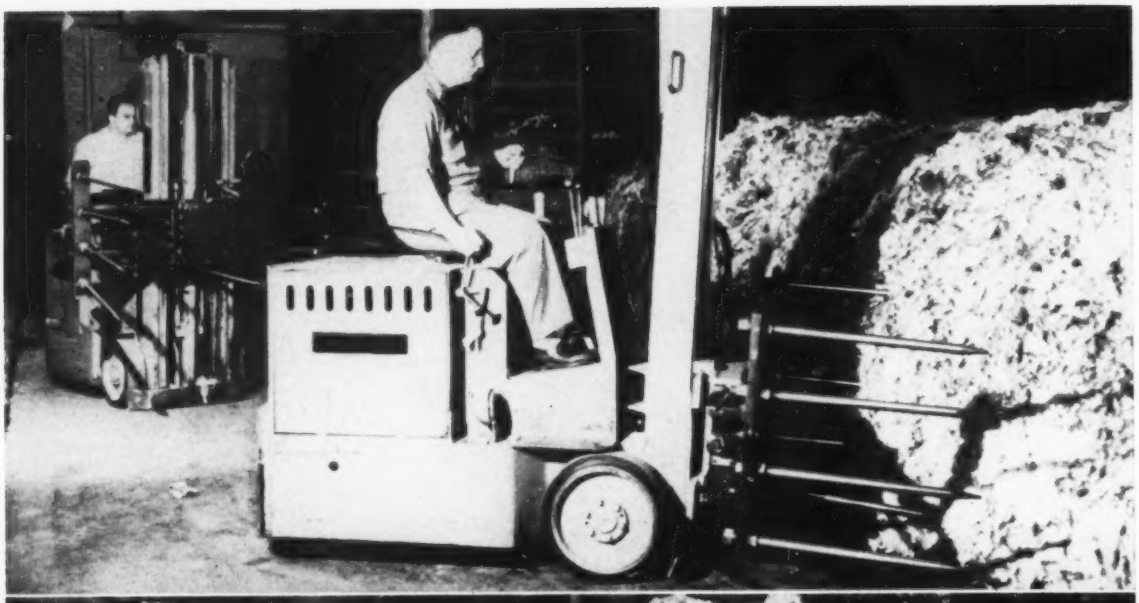
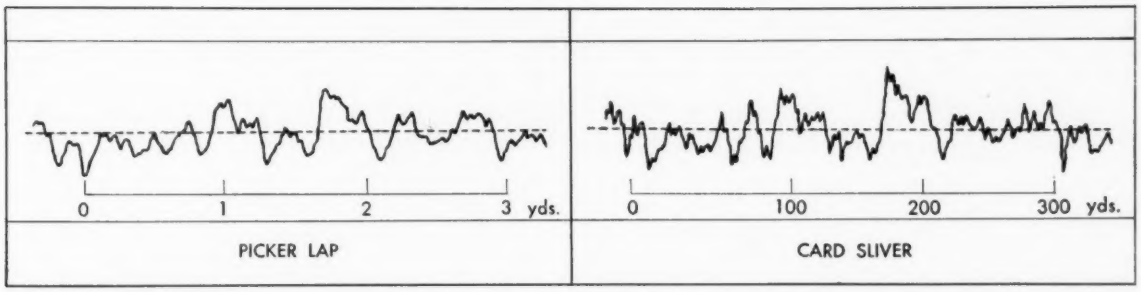


Mill Saves $8,320 a Year In WOOL HANDLING

A RHODE ISLAND MILL that formerly handled its scoured wool by hand is now saving $8,320 a year by mechanical handling.

Instead of having several warehouse workers load wool-transport trucks by hand, as the mill did for many years, two lift trucks, equipped with pronged holding tools and operated by one man each, handle all the wool used by the mill.

As shown in the accompanying pictures, the truck operators drive the trucks up to the pile of loose wool and push the prongs into the pile. They then raise the holding tool to clear the load of wool on the prongs from the wool pile and deposit the load in the truck.



PICKER-LAP VARIATION is reflected in card-sliver variation in a ratio of 1 to 100 where the card runs with a draft of 100. As shown here, the card does not remove or level out variation present in the lap.

14 Things That Cause *PICKER-LAP VARIATION*

► Most picker laps range from 4 to 8% coefficient of variation, although as low as 2% is possible

► To get the most-even picker laps possible, check your opening and picking against the 14 basic faults given here

By HANS LOCHER, Uster Corp.

PICKER-LAP COEFFICIENT OF VARIATION usually ranges between 4 and 8%; but in extreme cases, the range may be 3 to 15%, with 3% representing an even lap and 15% a very uneven one. This variation in the lap carries over, as shown on the accompanying charts, into card sliver and shows up in yarn off the spinning frame as variation between bobbins of yarn.

Variation is due, of course, to a varying number of fibers in the cross section of the lap. It is theoretically possible, with well-opened cotton and with no machine errors, to make a lap with 1 to 2% CV. Variation rises above these percentages as: (1) tufts of opened fiber become larger and harder to distribute evenly, and (2) machine errors affect fiber distribution in the lap.

The following standards, based on a great number of tests, are used by Uster Corp. for rating picker laps according to coefficient of variation:

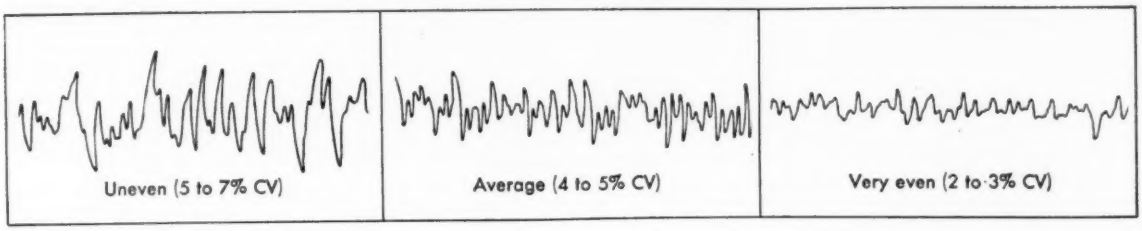
Rating	CV%
Very even	2 to 3
Even	3 to 4
Average	4 to 5
Irregular	5 to 7
Very irregular	8 and up

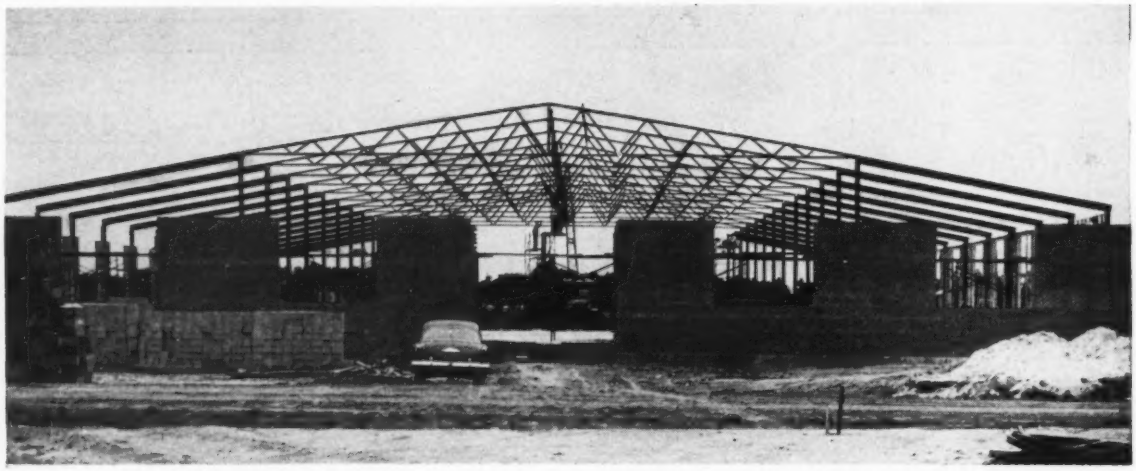
14 Causes of Variation

Fourteen basic faults that contribute to picker-lap variation are:

1. Air-flow on screen irregular; pressure in waste compartment too high
2. Chain drive of fluted rolls causes chatter
3. Level of second blending reserve varies too much. Evener belt on blending reserve slips
4. Types and speeds of beaters not best for the quality of cotton being run
5. Evener motion not free or not sensitive enough
6. Blending-feeder loading not constant
7. Lap winder not working properly as a result of bad or choked gears, binding gears, untrue shafts, etc.
8. Draft between the calender section and lap winder too high (should not exceed 6% approx.)
9. Loggerheads applying wrong or uneven tension
10. Lap pin not running true under loggerheads
11. Loose belts, particularly evener-motion and feed-apron belts
12. Screens dirty, eccentrical, or with rough surface
13. Wrong or defective gears
14. Bent lap pins or lap-pin ends

Evenness Standards for Picker Laps





ONLY TWO ROWS of columns are used in the 132-ft. building width. Location of looms is no problem.

NEW WEAVING MILL

When Sidney Blumenthal & Co., Inc., built a new weaving mill, its own engineering department supervised the work. Features are—

- **There are only two rows of columns in the 132-ft. width**
- **The roof and ceiling are aluminum insulated with rock wool**
- **No wood is used; the building is steel, aluminum, and masonry**

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

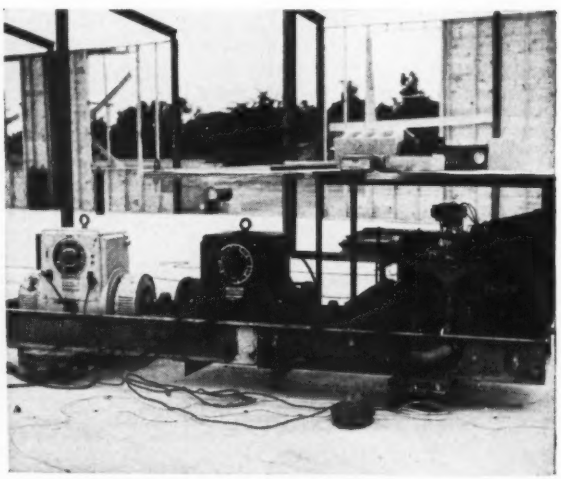
SIDNEY BLUMENTHAL & CO., INC., has ended its first hundred years of operation by building a new weaving mill at Scotland Neck, N. C.

Mill Does Own Work

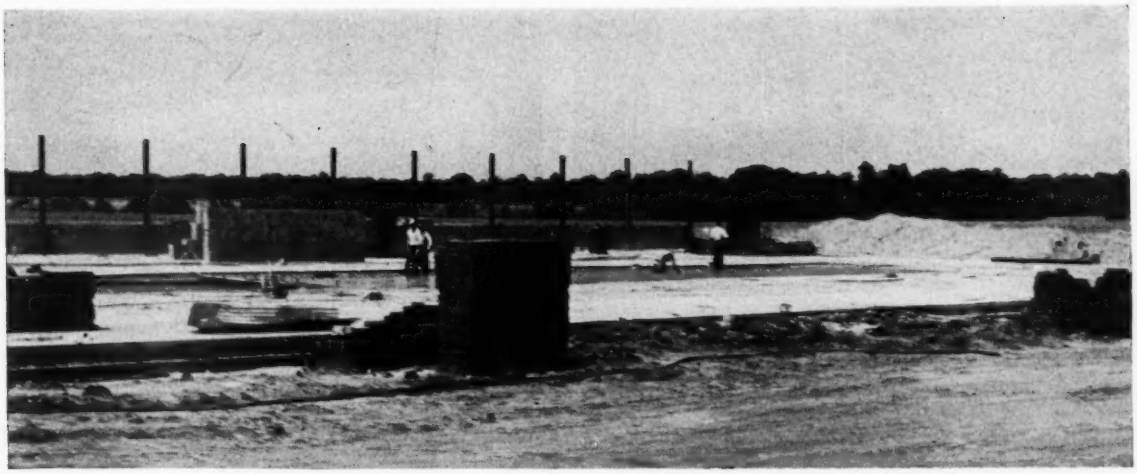
The mill was designed by the Blumenthal engineering department, under the direction of Charles Laughridge, plant engineer. Grading for the building was started June 15, and the building was completed Aug. 15.

The plant was built on a 100-acre tract adjoining the Roanoke River six miles from Scotland Neck. Water from the river is used for fire protection. All other water used is pumped from wells.

CANTILEVER TRUSSES span 72 ft. of floor space without columns. Trusses were welded on the floor.



HOMEMADE ELECTRICITY to supply high-voltage current for welding was generated right on the job.



CONCRETE FLOOR was poured as soon as the tamped, earth-filled foundation was laid.

Is Built in 60 Days

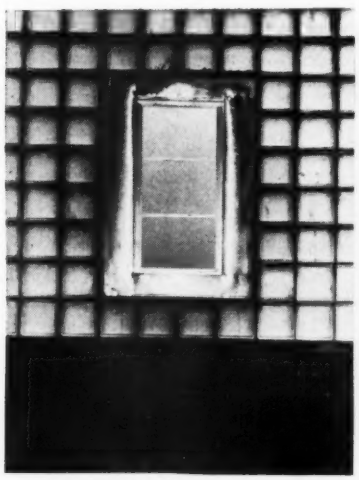
The building is made completely of steel, aluminum, and masonry. No wood is used anywhere.

The floor level of the building is 18 ins. above ground level on the high side and 3 ft. on the low side. The masonry up to the floor level is filled with clay tamped with a bulldozer.

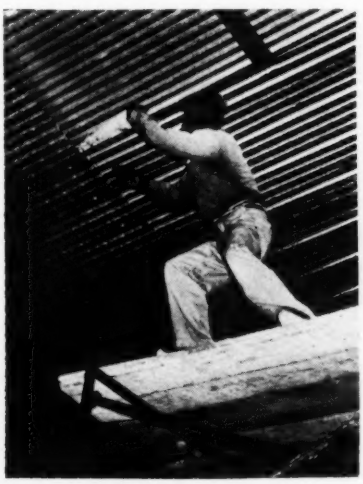
A concrete floor 4 ins. thick is cast around 6x6-in. reinforced wire mesh. The concrete surface is ground to a smooth finish. A concrete sealer was added after the grinding operation. The sealer is expected to last one year before the floor is resealed.

Walls are constructed of 8x8x16-in. concrete block on the inside, with a single outside layer of face brick. The bricks are laid with the 4-in. surface lengthwise to the building.

Window-spaces are made of 8x8-in. glass blocks. Each glass-block space is 9 ft. 2 ins. high and 10 ft. 6 ins. wide. Aluminum casement sashes, 2x3 ft. in area, are placed one to each of the glass-block spaces.



GLASS-BLOCK WINDOWS are centered with aluminum-casement windows.



ALUMINUM ROOFING is placed over rock-wool insulation.

The back of the building and one side are built of temporary construction because management expects to expand the mill soon.

Trusses Span 72 Ft.

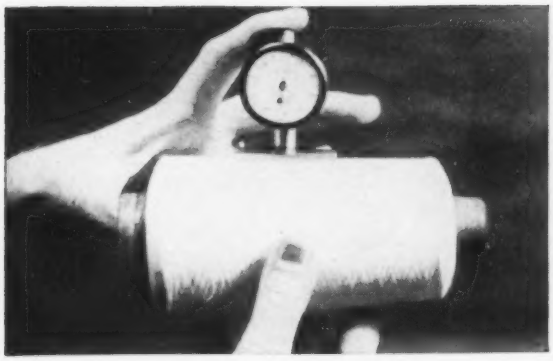
An unusual feature of the building is that only two rows of roof-supporting columns are used in the 132-ft. width. A row of I-beam columns is placed 30 ft. from each side to form bays. Fabricated steel cantilever trusses in one 72-ft. length span the 72-ft. distance between the columns. The columns were fabricated by three Blumenthal welders right on the job. The body of the trusses is 3x3x⅜-in. angle iron. The cross-section members are 3x3x¼-in. angle iron.

Initial welds were arc-welded with low-voltage current. Body welds were made with a high-voltage arc-welding set. At the time the trusses were made, the only power available was 110 v. A gasoline motor from another Blumenthal mill was used to drive a generator to manufacture the high-voltage current right on the job.

The roof is another original feature of the building. It is the common gable-type roof, but both the roof and ceiling are made of aluminum.

The ceiling is stud-welded to 7-in. I-beams between the trusses. Batts of 4-in. rock wool are placed on the ceiling. Then .032-in. corrugated and bossed aluminum roofing is stud-welded on top of the beams. The roof was constructed rapidly because one man can shoot 150 studs per hour with a stud welder.

The mill is not air conditioned, but the building is designed to add air-conditioning equipment without making any structural changes.



DENSITY CHECK is made for variations in wind from cone to cone. Variation causes mismatched heels and uneven leg lengths.

STICKING YARN on the traverse can be caused by splashed water on size. Tight courses or holes in the fabric will be made.

Systematic YARN CHECK Can Pinpoint Hosiery Troubles

- **Check cones before putting them on the machines**
- **Instruct knitters to watch for faults during knitting**
- **Trace defects that show up after dyeing**

By P. H. HERBERT

CAREFUL INSPECTION OF CONES before knitting can stop many hosiery defects before they're made, and knowledge of yarn defects can help to trace the causes of cloth defects.

No matter what kind or quality of hosiery you knit, you can benefit from paying close attention to your yarn.

How To Check Cones

Although many faults are often so hidden that they don't show up until after knitting or dyeing, some faults can be detected on the cones by an experienced eye.

Poor packing and careless handling can cause:

1. An unsymmetrical or squashed package
2. A loose build-up of yarn
3. A disturbed outer layer
4. A bruised, cut, or pierced package
5. A damaged nose of the cone

Winding is the source of these faults:

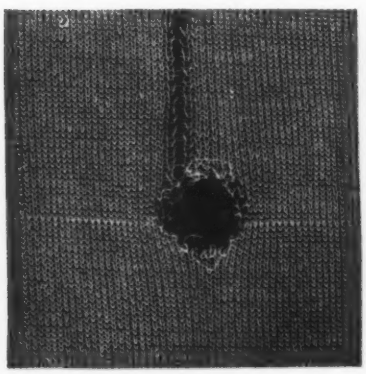
1. Ends that have not been tied or have worked out. (These ends often stick up on the top of the cone.)
2. A varying position of traverse. (The complete yarn package is wound too high up or too low down on the cone.)
3. Tight ridges that have built up on one or both ends of the package.
4. Tight ridges impressed in the traverse.
5. Misshapen packages caused by alternating variation in tension during winding. (The sides of the traverse have an irregular appearance.)
6. Patches of hardened size sticking the yarn together.
7. Fluff or pieces of other thread wound in on the traverse.

What Knitting Reveals

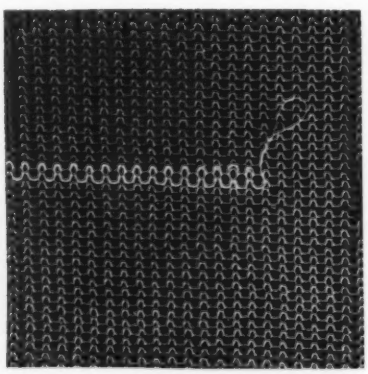
Some yarn faults can be hidden by good winding and seemingly perfect yarn on the outside of the package, and only vigilance on the part of the knitter can prevent imperfect hose. These faults include:

1. Density variations from package to package
2. Yarn-number variations from package to package

CONTINUED ON PAGE 186



BURSTS in the fabric are caused by a resistance to the flow of the yarn. Tight stitches can be seen on each side of the hole.



A DOUBLE THREAD knits into one course because the twist had not been set sufficiently and the yarn was lively.

First Look at 1954 Rio Grande COTTON

▶ First tests indicate that strength and fineness of early 1954 Rio Grande Valley cotton are slightly lower than 1953 cotton.

EARLIEST TESTS OF 1954 cotton grown in the lower Rio Grande Valley of Texas (Cameron, Hidalgo, and Willacy counties) indicate that:

In comparison with 1953 cotton—

Strength is slightly lower

Fiber is slightly coarser

[CAUTION: Cotton-fiber properties vary with the season, and first ginnings may not be representative of the whole cotton crop. It should be kept in mind that the 1953 test results referred to covered the whole crop year, while the 1954 tests cover only early cotton. Therefore, as the 1954 cotton season proceeds, these comparisons may or may not hold true.]

Based on test data issued by the Cotton Economic Research department of the University of Texas.

Cotton in 1953 vs. 1954

In 15 lower Rio Grande Valley locations from which tests are available for all of 1953 and early 1954, average fiber strength and fineness compare as follows:

	1953	1954
Strength (1,000 lbs.)	84.6	81.4
Fineness (Micronaire)	3.9	4.2

In 35 locations in the three Valley counties, 1954 early cotton averaged:

Strength—81.8 (1,000 lbs.)

Fineness— 4.2 (Micronaire)

Principal varieties tested were Deltapine-Fox, Empire, Acala, Stoneville 2-B, Northern Star, and Qualla.

Most of the cottons tested fell near the dividing line between ratings of Strong and Average Strength and Fine and Average Fineness. The range in fiber strength of 76,000 to 87,000 lbs. covered 78.2% of the samples, and the fineness range of 3.5 to 4.9 Micronaire units covered 93.1% of the samples.

Greatest concentration of samples was in the strength range of 79,000 to 84,000 lbs., which included 45.1% of the cottons. Heaviest fineness concentration was in the range of 4.0 to 4.4 (22.2% of the samples).

Answers on FINISHING Dynel-Viscose-Acetate Blends

▶ Drying the fabric at the resin-curing temperature after dyeing results in a soft hand

▶ The drying temperature before curing should be kept low

▶ Sufficient resin should be applied to stabilize the viscose portion of the blend

Q. Is any special method required for napping a Dynel-viscose-acetate fabric?

A. No. Follow the usual napping practices.

Q. How are the dyed goods prepared for finishing?

A. Frame the material approximately 1 in. wider than the desired finished width, and dry at a temperature not under 250° F.

Q. Is it necessary to treat the fabric for dimensional stability?

A. Yes. Although the presence of Dynel increases the bulk of a fabric, the viscose portion of the blend requires resin treatment for dimensional stability. The type and quantity of resin should be based on the amount necessary to give the proper hand and stability; different fabric constructions may require different combinations. Softeners can be used to control the hand.

Q. How is the resin-treated fabric cured?

A. Cure without tension at the usual resin-curing temperatures used on viscose-acetate blends.

Q. Should the goods be washed after curing?

A. Washing softens the fabric hand. However, drying at the resin-curing temperature after the dyeing operation imparts the same soft hand and can take the place of washing. In cases where the fabric is washed after curing, under no circumstances should it be framed wider than the width after the resin-curing operation.

Q. Is decating useful?

A. Semidecating can be used to improve the colorfastness of the fabric to the heat of a pleating operation. It also improves the fabric hand and stabilizes the Dynel. The dyehouse should establish the steaming time and pressure.

How a Typical Fabric was Finished

Blend—25% Dynel-25% acetate-50% viscose.

Fabric—8-oz. flannel, gray width 49⅜ ins.

After dyeing, the fabric was 45⅛ ins. wide. The cloth was framed to 46 ins. and dried in a covered clip frame at 275° F. After napping, the width decreased to 45 ins. The fabric was padded with resin, framed at 45¼ ins., and dried at 250° F. The resin was cured in a loop dryer at 320° F. with an exposure time of 6 mins. After curing, the fabric was 44⅞ ins. wide. The resin-treated fabric was steam-framed at 45 ins. and inspected.

SUPERVISOR TRAINING
Should Cover Four Subjects—

1. **What responsibilities are**
2. **How to influence people**
3. **How to instruct workers**
4. **How to plan work**

▶To accomplish this training, there is plenty of material to select from

By RICHARD M. RICE

IN A SURVEY of three textile mills, 80 supervisors, ranging from assistant overseers to superintendents, said they need training in four subjects: (1) what the supervisor's responsibilities actually are, (2) how to influence people, (3) how to instruct workers, and (4) how to plan work.

Since management has no sure way of predicting how a man will perform as a supervisor when he is promoted, it is necessary to promote a man and then to provide the necessary training to develop him into an effective supervisor. Schools do not teach the techniques of mill supervision; so mills have to establish a training department within their own organization.

A mill interested in improving the caliber of its supervision can work out an effective training program on its own or obtain outside help. There is no quick, easy course for training supervisors; but there is plenty of material available.

Probably the two most important things to consider in setting up a training program are: (1) the training should cover the actual needs of the supervisors rather than what somebody thinks their needs are; and (2) a planned training program should be followed rather than piecemeal training or occasional lecture sessions.

The proper industrial atmosphere cannot be cultivated overnight, purchased from a consulting organization, or forced down people's throats. A good industrial atmosphere is created by how supervisors do things rather than by what they do, and this is the reason supervisors need to be given training in the art of supervision.

FOUR AREAS FOR TRAINING

1. What Responsibilities Are

A supervisor in a mill is responsible to his company, his immediate supervisor, his co-supervisors, and his workers, as well as for production, cost, safety, quality, maintenance, etc.

For supervisors to be successful, they must know exactly for what and to whom they are responsible. Some supervisors are told about their responsibility through a verbal briefing. Other mills pass out handbooks.

After verbal briefings, supervisors have the problem of remembering all they heard. If they get a handbook, they have the problem of interpretation; and an adequate interpretation is essential for the proper discharge of responsibilities.

A handbook is useful only if it clearly sets forth the supervisor's responsibilities. If a mill management doesn't feel capable of developing a handbook, it can select books, written by experts, that substantiate what the management considers the responsibilities of its supervisors to be. Then the material that is developed or selected can be used in training conferences to insure that supervisors have a clear knowledge and proper interpretation of their responsibilities.

The second phase of training is to develop techniques for discharging the responsibilities. Supervisors cannot be given techniques; they must develop their own. This self-development is the reason training is a long and gradual process; but as a move toward better human relations and greater security, training will return large dividends in the long run.

Material for training in understanding responsibilities can be found in *Elements of Supervision*, by Spriegel and Schulz (John Wiley and Sons).

2. How To Influence People

In modern industry, the supervisor wields the greatest influence over workers. Supervisors, regardless of their technical problems, work with people; and establishing and maintaining good human relationships are essential to the influencing of people. A textile plant can buy the finest machines and the best raw materials; but unless the working force is influenced to cooperate, a quality product will not be produced. A mill can have the best organization, with all levels of supervision filled with the best technical men; but unless it has the cooperation of the working force, it will never produce maximum efficiency.

The supervisor's job is primarily controlling, guiding, leading, and inspiring people to do their jobs. Proper relationships between supervisors and

workers is the most powerful stabilizing force in industrial relations; improper relationships produce a strong disruptive force. Untrained supervisors, in their efforts to do a good job, often try to secure maximum productivity without encouraging the attitude of cooperation that is essential to maximum production.

A knowledge of the fundamentals of psychology is essential in getting along better with people. The purpose of training supervisors in psychology is to teach the supervisor what he can do to help fulfillment of these basic needs. Industrial psychology deals with the way men's minds work, how good work habits can be formed, how proper attitudes can be developed, and how to engender the spirit of cooperation. Through psychology, supervisors can learn to understand the motives, needs, and attitudes of people to direct their work effectively.

Two books that are helpful in developing an understanding of psychology are: *Practical Psychology*, by Bernhardt (McGraw-Hill) and *Psychology of Industrial Relations*, by Lawshe (McGraw-Hill).

A textile supervisor must also possess leadership ability to influence people. Leadership builds morale; effective leadership is to people what lubrication is to machinery.

Mill management has the responsibility for helping supervisors develop leadership. This leadership can be developed through training in sizing up situations and ways of working with people. The day of the driving supervisor is past; the supervisor of today must be a leader, a planner, and a student of people.

3. How To Instruct Workers

Much of a supervisor's job is instructing workers in how to do their jobs, and supervisors need to know the best method of instructing.

This training deals with how to get workers to do their jobs correctly, quickly, and conscientiously.

A course developed by the Training Within Industry Service during World War II has proved very successful. The technique is called Job Instructor Training.

It consists primarily in teaching supervisors the technique of how to get ready and how to instruct. The reading of this material is not sufficient training for a supervisor to become a good instructor. In the training course, the supervisors are given demonstrations by the trainer and asked to participate in the two main steps: how to get ready, how to instruct. An experienced teacher is required to do this type of training.

The material is available from: Training Within Industry, Trade and Industrial Div., Department of Education, Columbia, S. C.

4. How To Plan Work

A successful supervisor must learn to plan his work; he needs training in how to plan his personal work and the work of his department. Without an ability to plan, a supervisor will never win the confidence of the people in his department. Planning requires constructive analysis, and most supervisors will improve their ability to plan if this type of training is made available. One reason for bottlenecks and delays in production is that many supervisors are unable to plan their work adequately.

There are definite abilities that must be developed before a man can plan effectively. These abilities include the capacity to see the situation as a whole, to break a problem down into its elements, to use constructive imagination, to be versatile, to have resourcefulness, to convert old methods into new methods, to maintain an impersonal approach, and to measure the effectiveness of a procedure. Without an ability to plan, a supervisor can get so bogged down in details that he has no time for supervision.

The course selected for this training would depend on the local organization and the needs of its supervisors. One book that has proved helpful is *Elements of Supervision*, by Spriegel and Schulz (John Wiley and Sons).

CONFERENCE TRAINING IS BEST

The common methods used in training are: conference, lecture, and demonstration.

The lecture method finds its greatest use in induction training and explaining company policies, insurance, and benefit programs.

The demonstration method is best for training operators, inspectors and assemblers and for safety training.

The conference or group-discussion method of instruction has been generally recognized as the most effective for training supervisors. This method has several distinct advantages:

1. More ground is covered with less sidetracking of important issues.
2. Pooling of experiences provides the best solution for common problems.
3. Freedom for questions is permitted.
4. Local applications of general topics are developed.
5. The stigma of schooling is eliminated.
6. Opportunities for individual participation arouse interest.

Supervisor-training conferences should meet preferably on company time. The leader should have training in conference leadership; and he should be selected because of his ability to present a subject and conduct a discussion in a clear, orderly, and interesting way. He should also have a knowledge of the subject.

The training group should not contain more than 20 members. Sessions should be held at least weekly and preferably twice a week over a period of 10 to 15 weeks. It is better to run different courses over a number of years than to work supervisors to the point of fatigue and lack of interest in one long exhaustive course.

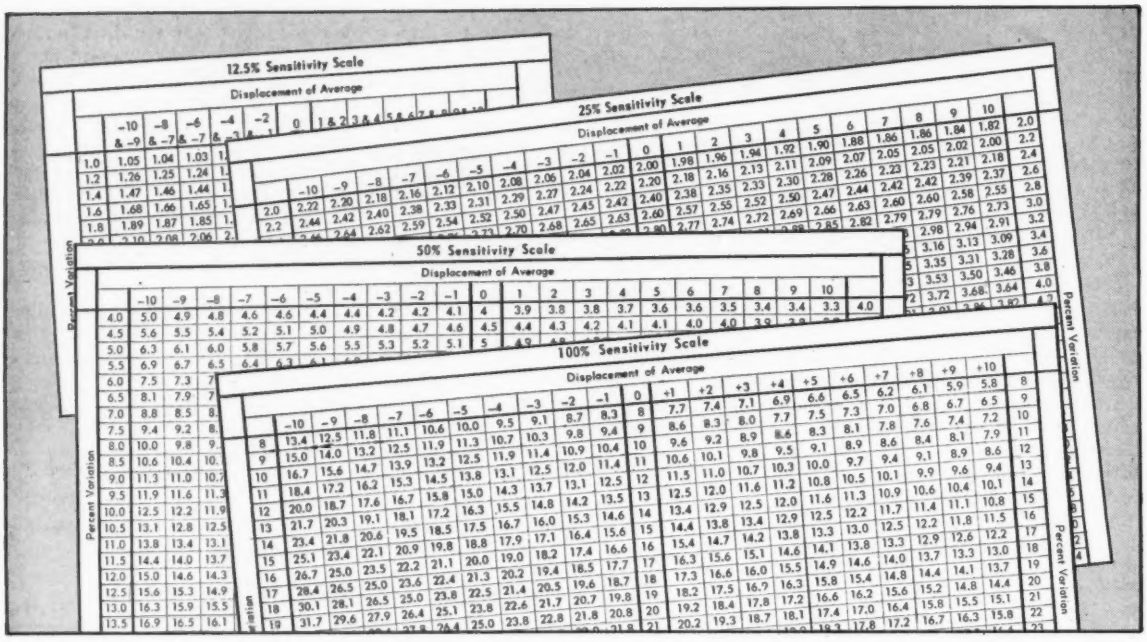
Other books that can be useful in developing this program are:

Job Relations Training, developed by War Manpower Commission during the war. In this course, supervisors are helped to develop a practical technique of solving supervisory problems.

How To Conduct Conferences, by Cooper (McGraw-Hill). This course deals with industrial conference leadership in which supervisors are shown and given practice in conference leadership. In this course, supervisors learn the art of talking with instead of talking to people.

Other books that point out leadership characteristics are: *Human Relations in Industry* by Gardner and Moore (Richard D. Irwin); *Supervising People* by George D. Halsey (Harper Brothers); *The Foreman in Manpower Management*, by Gilbreth and Cook (McGraw-Hill); *Moving Ahead on Your Job*, by Calhoon (McGraw-Hill); and *Management Can Be Human*, by Stowers (McGraw-Hill).

After the primary training program is completed, the conference sessions can be continued with case-history problems.



THESE TABLES* can be used to obtain a direct reading of the average percent variation from either the linear or quadratic integrator reading of a Uster evenness tester. The four tables cover the 100, 50, 25, and 12.5% sensitivity ranges.

Try These Tables To Speed* EVENNESS CALCULATIONS

▸ Four tables, based on the Uster manual, list correction factors and eliminate the necessity of making a calculation to determine average percent variation from the integrator reading.

By WILLIAM LANG

PRESENT OPERATION of the automatic integrator on the Uster evenness tester to find average percent variation of sliver, roving, or yarn involves the reading of two scales. One scale reads average percent variation, and the other reads displacement of average. The original reading of average percent variation must be adjusted by multiplying by an appropriate correction factor to allow for the displacement of the average.

The tables illustrated here eliminate looking up the correction factor and then performing the multiplication. Instead, a direct reading is possible. The tables cover the four sensitivity ranges provided on the Uster tester: 100%, 50%, 25%, and 12.5%.

How Tables Are Used

Assume that you are testing yarn and that the tester is operating on the 100% sensitivity range. Suppose the average-percent-variation reading for the yarn is 10%, and the displacement-of-average reading is −5. What is the corrected average percent variation?

To find the answer on the table for 100% sensitivity range, locate the line for 10 under percent variation. Proceed horizontally until the point −5 is reached under the displacement-of-average column. The figure is 12.5; so the corrected or true average percent variation is 12.5%.

Without the table, we would have had to proceed as follows:

1. In the Uster table "Correction Factors for use with the Uster Evenness Tester" on p. 10 of the Uster manual, we would have found the line for −5, which is the displacement of average.

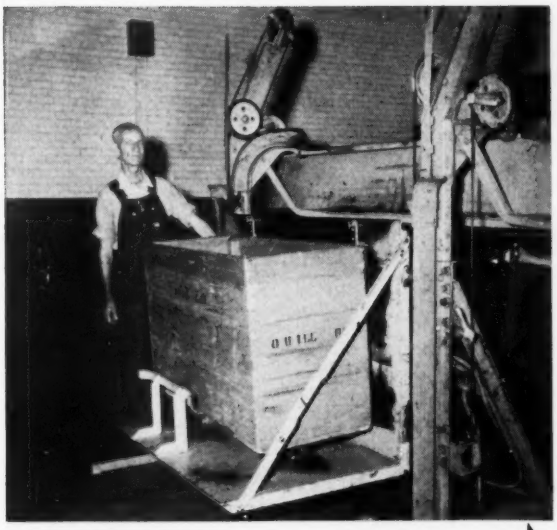
2. Proceeding horizontally, we'd have found the column for the 100% sensitivity range.

3. In this column, we'd have found the value 1.25, the correction factor.

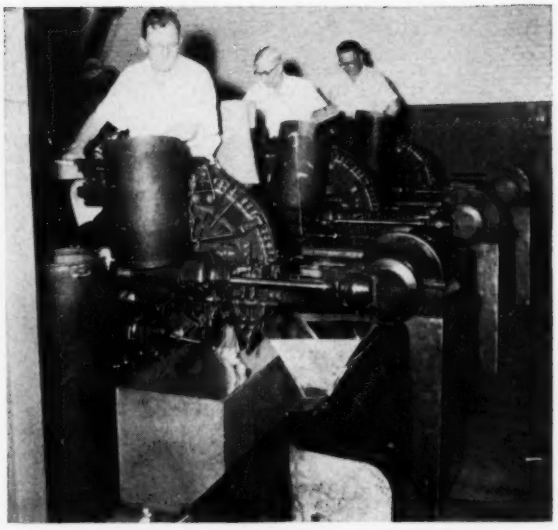
4. Then we would have multiplied the average percent variation (uncorrected) of 10% by 1.25 and obtained 12.5% corrected average percent variation.

As mentioned in the Uster manual, the method of correction is the same for both the Linear Integrator, which measures average percent variation, and the Quadratic Integrator, which measures coefficient of variation. Since the tables illustrated here are based on the manual, they are applicable to both the Linear and the Quadratic Integrator.

* *For Complete Tables—Copies of the four tables can be obtained without charge by writing* TEXTILE WORLD, *330 W. 42nd St., New York 36, N. Y.*



ELECTRIC HOIST lifts the weave-room quill box and empties it into the stripper supply box. The quill box is rolled onto the platform.



THREE STRIPPERS, each stripping 120 quills per minute, are operated two shifts to take care of 10,000 filling spindles running on two shifts and 5,000 on the third shift.

QUILL-HANDLING System Cuts Out Four Handling Jobs

▸As a result of an electric-hoist and conveyor-chute system, four quill-handling employees were moved to better jobs at Dundee No. 1.

By E. DALTON WHITE

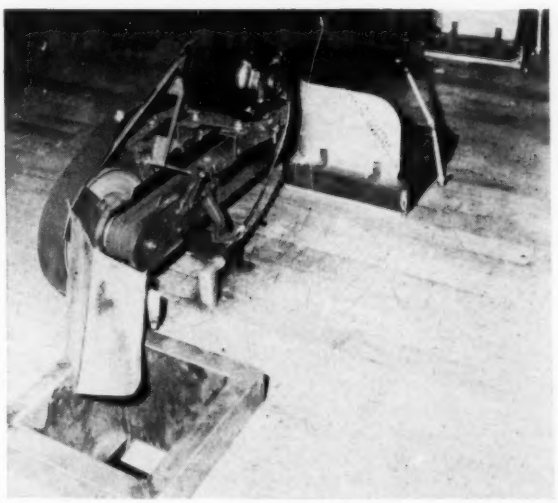
When Dundee Mills expanded Mill No. 1, Griffin, Ga., and rearranged production equipment, the quill-stripping department was moved to the floor above the spinning rooms, and three automatic Terrell strippers were installed. To cut down floor traffic and manual materials handling, a conveyor system was designed by Terrell.

Before the conveyor was installed, a third-shift crew of four was required to handle quill boxes. These four employees were assigned to better jobs when the handling system was installed.

On the supply side, an electric hoist is used to dump quill boxes coming from the weave room into the stripper supply box.

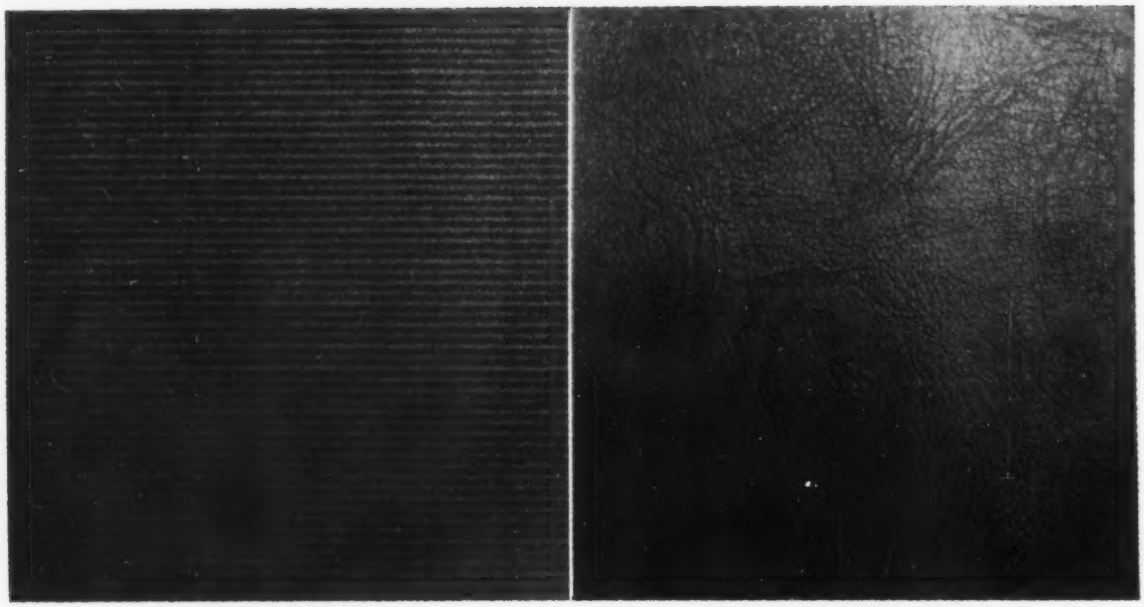
To handle stripped quills, five storage bins are necessary to take care of the five kinds of quills, which are painted different colors for identification. A conveyor belt passing over five chutes solved the separation problem. A baffle is released to direct the quills into any of the first four chutes; and with no baffle in place, the quills drop over the end of the conveyor into the fifth box.

In addition, quill damage is reported to be down.



CONVEYOR passes five storage-bin chutes. A baffle is released to direct quills into any of the first four chutes. A ½-hp. motor drives the belt.

FROM THE STORAGE BIN, stripped quills are removed through the lift-door opening in the spinning room. The quill-handling system moved four employees to better jobs.

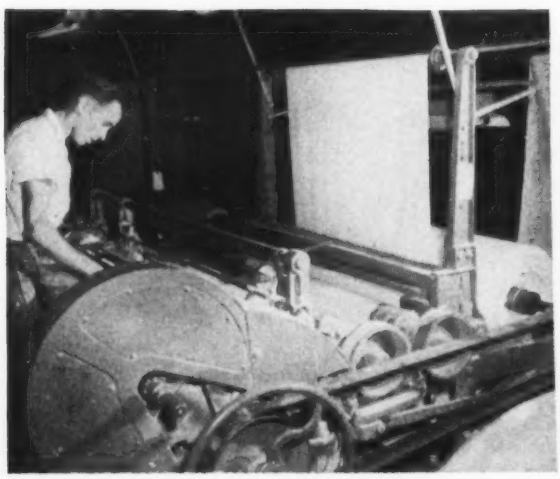


CORDUROY FABRIC has . . . VINYL-COATED BACK

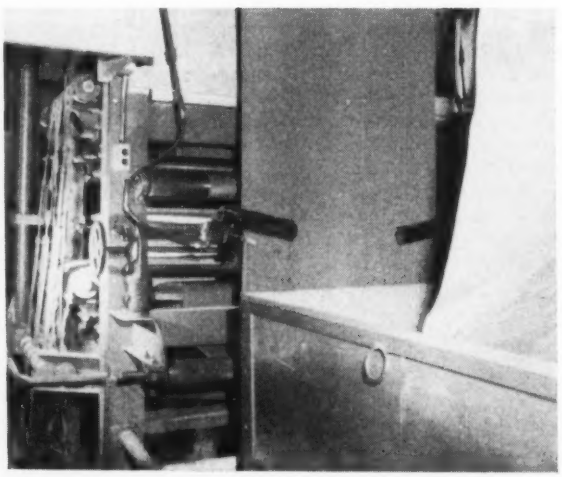
How American Finishing Co. FINISHES and COATS Corduroy

► The American Finishing Co. is coating corduroy fabrics to produce a jacket material that requires no lining. The process consists of regular corduroy finishing, coating, and embossing.

By J. P. DUFFY, American Finishing Co.



CUTTING MACHINE cuts the wales in the gray corduroy after it has been backsized.



REBRUSHING operation after dyeing raises the pile, which has been flattened in dyeing.

VINYLROY, a new product developed by American Finishing Co., Memphis, Tenn., consists of corduroy with a vinyl-coated back. The company had been finishing corduroys and coating fabrics for many years and decided to combine the two operations.

The corduroy is cut in a cutting operation that includes two machines, each cutting half the wales. The cut fabric is inspected, and the spots missed in cutting are manually cut.

The goods then receive a desizing and scouring operation that removes the sizing in the material, and the corduroy is washed and neutralized. After the scouring, the fabric is passed through a water mangle, where it is extracted, and then through dryers. It next passes through a special pile-forming and -setting machine developed at American Finishing Co. This machine is followed by a singeing operation and several other brushing operations.

After the singeing, the cloth is bleached and then dyed with fast colors by batch or continuous methods, depending upon which method yields the best results on the particular fabric. The material is then framed to width and inspected.

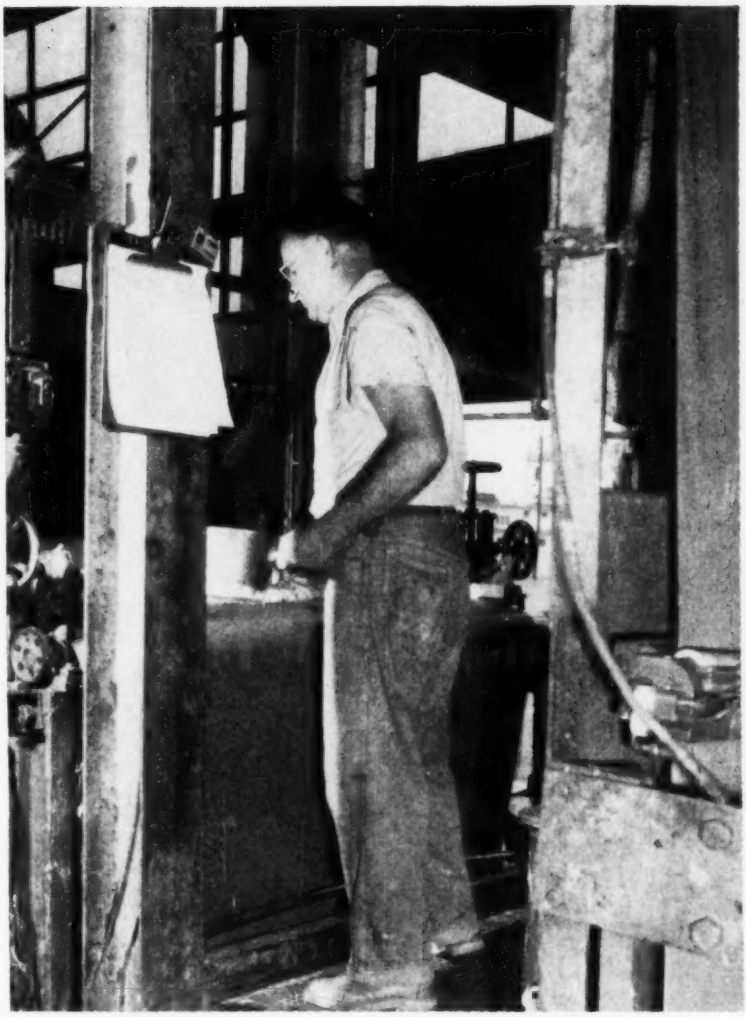
How Coating Is Done

The corduroy is now ready for the coating department, where the back is coated with a vinyl plastic and run through an oven to fuse the resin at 375° F. Several coats may be applied, depending on the qualities desired in the finished product.

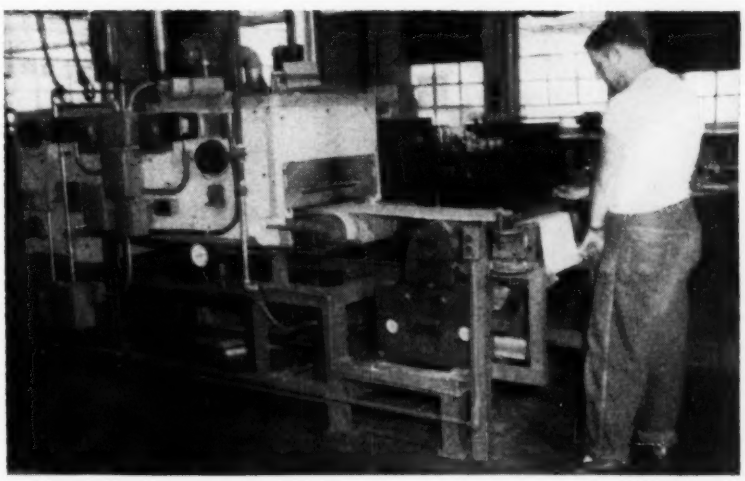
The coated fabric is then clear-coated and embossed to provide the desired finished appearance. The embossing is done in a hydraulic calender where the goods are first preheated to 250° F. so that they will accept the grain.

Both the finishing and coating division laboratories are engaged in constant quality control of the finished product. Coating formulations are tested in the laboratory prior to application, and laboratory control of each operation is maintained. Since the quality of the finished product is dependent upon both the finishing and the coating operations, it is almost essential that such a material be produced in a plant equipped to perform both operations.

The coated fabric produced at American is washable within limits in a home washing machine. The colors require careful selection in order to dye a fabric with fastness to light and perspiration that is free from both wet and dry crocking. The coating was designed for flexibility under severe cold conditions and for abrasion and scuffing resistance.

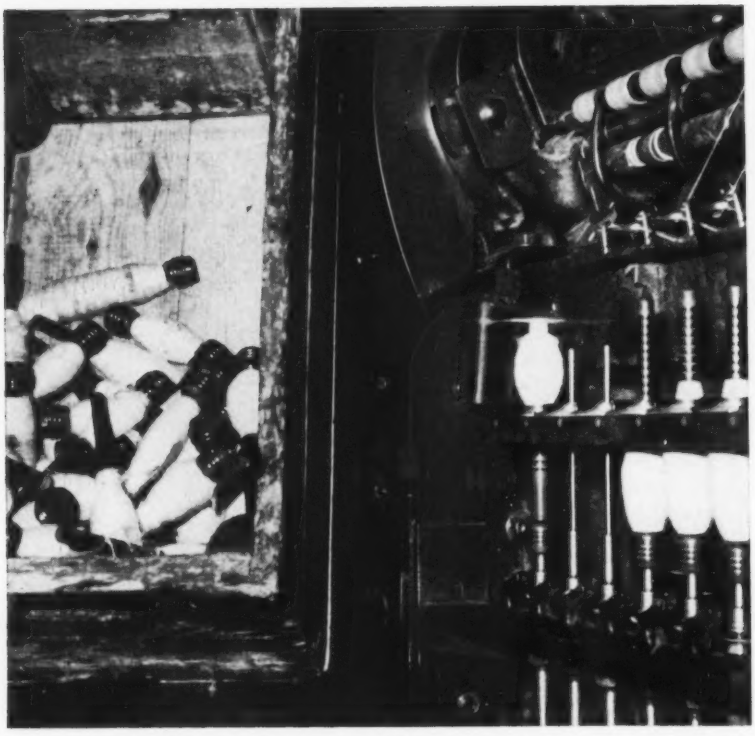


COATING OPERATION consists of putting a layer of vinyl coating on the back of the finished corduroy and passing the fabric through an oven. Several coats are necessary.

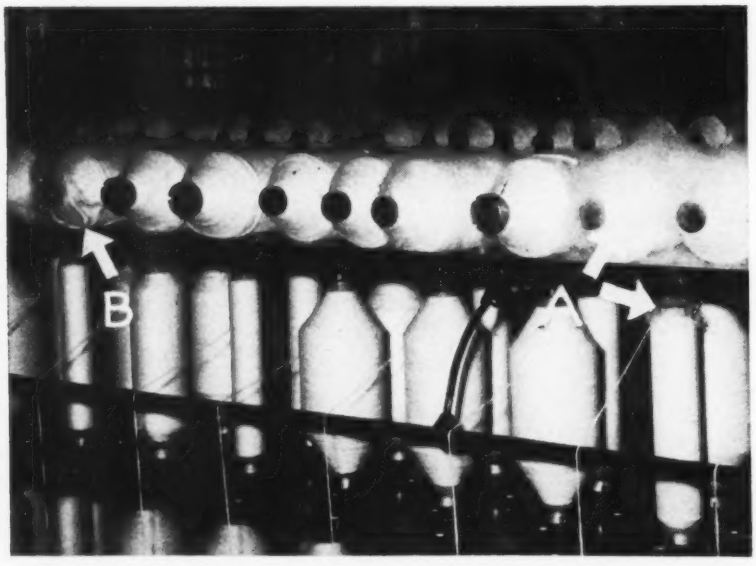


A MINIATURE COATING MACHINE in the laboratory prepares samples of coated fabrics under conditions close to actual processing.

A WASTE-CONTROL PROGRAM
For the Cotton Spinning Room



"HOW TO GO BROKE" could be the title of this picture and the one below. Here, oily, slubby, tangled, and dirty yarn is stripped from the bobbins by being run onto the end bobbin of the spinning frame.



TWO CAUSES OF WASTE. The fly at *A*, which has settled on the roving during long storage in a bin or box or on the creel, will go into the yarn, large tags of it as slubs. The tangled roving at *B* will break back in the creel.

▶ Here's a waste-control program for a cotton spinning room, worked out from start to finish. The basic method is to analyze your present methods, make ends-down studies, calculate new waste standards, and sell your operators on the new standards.

By D. E. BAYLIS

BEFORE YOU SET UP or revise waste standards, you have to analyze and study your present methods of controlling spinning-room waste. Then before determining standards, explain the purpose and need for waste control to your operators. Here is the basic approach to follow:

1. Analyze present methods of waste collection, methods of waste weighing, and standards in use.
2. Study your end breakage and costs.
3. Explain by means of conferences what a waste standard is, why a standard is necessary, how it is worked out, and alternative methods of collection and weighing.
4. Determine what the various standards should be, how to utilize this information in the best way possible, by graphs or lists, and the savings involved.
5. Follow up with regularly scheduled meetings on waste.

Analyze Present Situation

You may discover that insufficient attention is being paid to segregation of wastes from various blends or mixes, but don't disturb anything being done until you have the complete story.

Write out all the details as they present themselves so that you will have a permanent record of your findings. Include in your record all the present methods of waste weighing and the personnel involved.

Present practices may not be wrong, but likely you will find that the methods can be improved upon.

A review of present spinning-room standards should not take long, because a relatively few types of waste are handled. Record them all, for the basis of standards can be by either test or calculation.

Study Ends Down

Group the numbers spun, and test for the ends down per 1,000 spindle hours. Ends broken after the doff, until the bobbin is a quarter full, should be noted separately; most of your waste will be made at this part of the bobbin build. Your end-break tests reflect the operating condition for setting the standard ends down per 1,000 spindle hours.

A job running with a low number of ends down per 1,000 spindle hours will naturally turn out a large actual production with little waste.

If it cost 50¢ to manufacture a pound of yarn, a pound of yarn waste also costs 50¢ to make. The resale value of that waste is perhaps 16¢ per lb.; so there is a net loss on the manufacturing cost of 34¢ per lb. for every pound of yarn waste made.

Another viewpoint on yarn waste: the cost of the yarn waste is actually the same as the selling price of commercial quality yarn. Suppose you sell your yarn for 79¢ per lb. and your yarn waste for 16¢ per lb. You then have a net loss on the selling price of yarn of 63¢ per lb. Priced on this basis, a few hundred pounds of yarn waste a week soon amounts to astronomical figures.

Hold Session on Waste

Often we try to do things in the mill without explaining to our operators what we are after. Now is the chance to tell them what waste is costing in dollars and cents. If you stagger times and groups you can obtain a wide coverage of employees.

Start off your program by showing total monetary loss figures for the past year. Tabulate these figures in an understandable manner, and explain to the group in simple terms just what losses are involved. Explain how much a full bobbin is worth and the value of a roving bobbin in the creel.

What Waste Standards Are

A waste standard can be compared with the carburetor on your car. A carburetor, properly set and maintained, allows you maximum use of fuel. And so it is with waste. A waste standard, properly set and maintained, provides maximum use of stock.

Actual waste percentages compared with the standards set show your progress in waste reduction.

Calculate Waste Standards

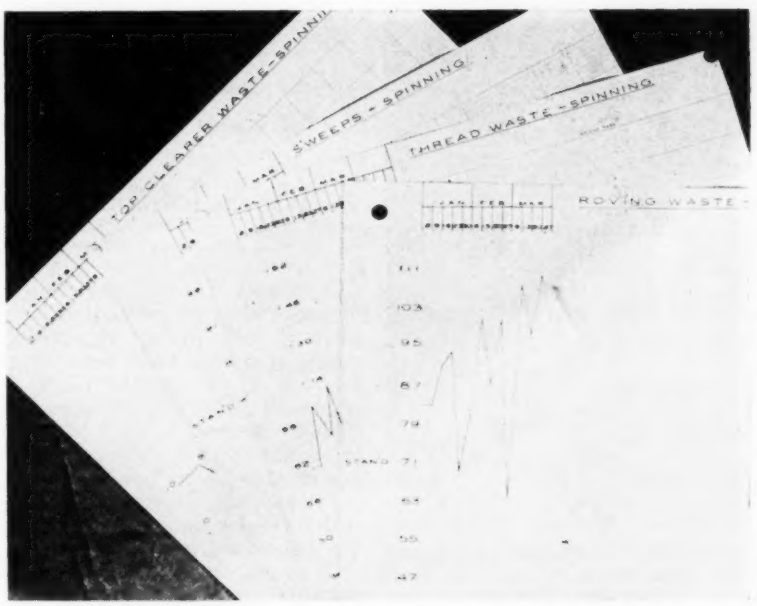
The calculation for scavenger-roll waste looks like this:

$$\frac{\text{breaks per 1,000 hrs.} \times \text{avg. time down} \times 100}{1{,}000 \text{ hrs.} \times 60 \text{ mins.}} = \frac{35 \times 6 \times 100}{1{,}000 \times 60} = 0.35\%$$

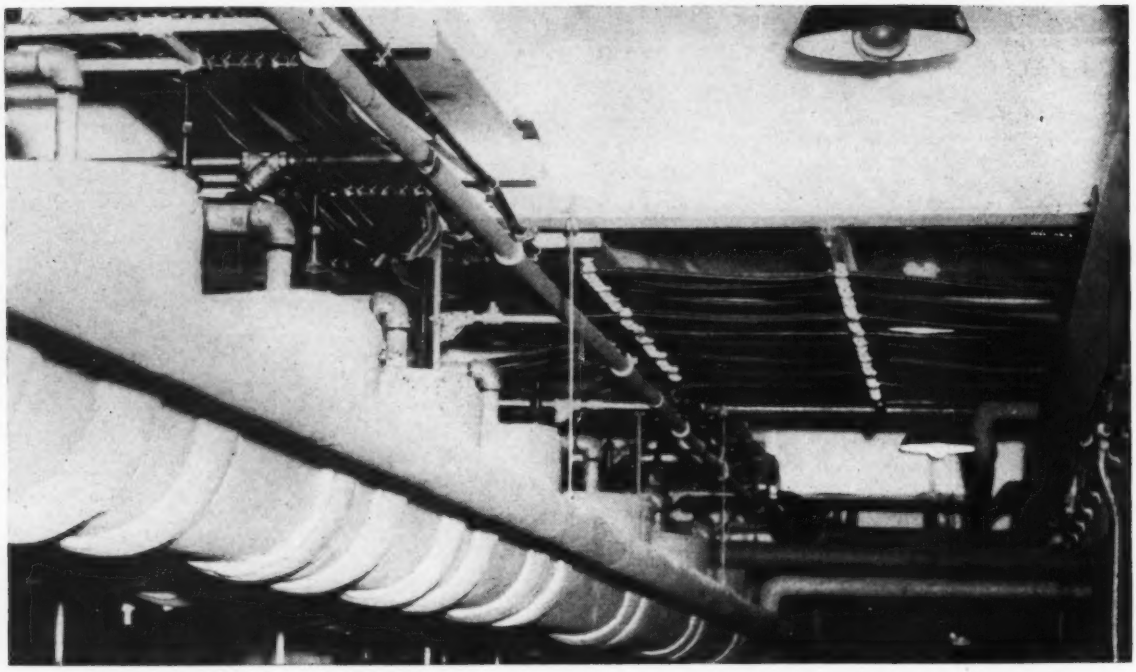
CONTINUED ON PAGE 190

	FEBRUARY											
	M.	T.	W.	T.	F.	M.	T.	W.	T.	F.	M.	T.
L. DOYLE—	2.9	3.1	1.4	2.1	2.7	1.4	3.1	3.1	2.9	2.3	2.6	3.5
J. BALL —	3.5	3.6	2.7	3.3	4.9	3.2	2.2	2.1	2.4	2.2	2.6	1.8
K. HARDY—	2.0	3.1	3.0	4.7	4.0	3.7	2.3	1.8	3.1	3.1	2.9	3.3
F. BUNCH—	2.3	1.4	1.3	1.2	1.6	1.9	1.5	2.0	2.1	.6	1.5	2.1
H. HALL —	1.7	1.5	.8	1.1	1.6	2.0	1.3	1.9	1.6	.8	2.8	1.9
C. YOUNG—	2.8	2.7	1.0	2.3	3.2	3.1	2.3	3.1	3.4	2.6	1.9	2.6
B. CONN —	1.3	.9	2.4	3.3	3.7	4.0	2.8	4.1	1.2	2.5	2.3	2.5
A. GRAVES	3.6	.7	2.8	2.2	2.2	2.3	3.1	2.1	2.5	3.0	2.5	.8
C. TRAVER	2.8	2.2	1.1	1.5	3.2	1.5	3.9	.7	1.7	.8	1.3	2.0
E. SCOTT—	3.0	1.9	3.1	1.6	2.6	1.4	.5	1.4	2.2	1.2	1.3	.8
S. SMITH—	2.1	2.0	3.7	2.9	1.9	1.4	2.0	2.7	1.8	2.6	3.9	2.2
D. BROWN—	1.0	3.4	.7	2.1	3.1	1.1	2.0	3.1	3.0	3.0	2.6	3.0
M. WHITE—	2.7	2.9	2.2	2.7	2.1	1.2	3.1	2.7	3.2	3.6	.3	2.7
					155					149		

DAILY WASTE WEIGHINGS are recorded for each operator and totaled for the week.

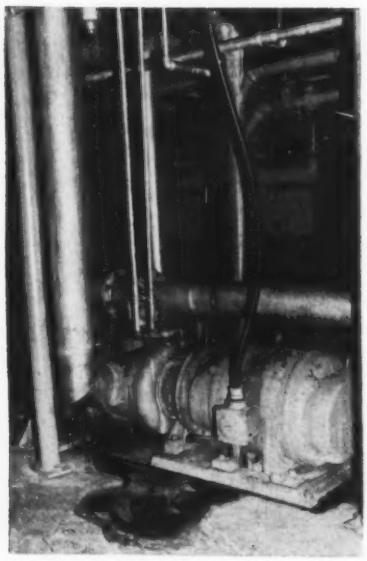


WEEKLY WASTE TOTALS are converted to percentages and charted on graphs.



FLEXIBLE, CORROSION-RESISTANT CONDUIT is installed in lengths up to 150 ft. Flexibility lowers the installation costs.

DYEHOUSE-MAINTENANCE Costs Cut With Noncorrosive Conduit



THE PUDDLE OF CORROSIVE LIQUID on the floor cannot damage the lead to the motor, since the wiring is encased in a moistureproof, corrosion-resistant conduit.

Corrosion-resistant electrical conduit at the American & Efird dyehouse gives these advantages—

- **Installation savings in time and money**
- **No maintenance problems**
- **Elimination of fire hazards caused by short circuits through conduit**

By MICHAEL LONDON, Assistant Editor, TEXTILE WORLD

To REDUCE electrical maintenance costs and power breakdowns in its finishing and dyeing departments, American & Efird Mills, Inc., Mount Holly, N. C., has installed 13,500 ft. of flexible, moistureproof, corrosion-resistant electrical conduit (Sealtite) in its Finishing Div. The bulk of the new conduit has been installed in the package-dyeing departments where moisture and fumes constantly corrode ordinary conduit.

The new conduit was installed partly because of an incident at the company's Lawrenceburg, Ky., plant. An ordinary galvanized-steel conduit, weakened by corrosion, separated from a junction box; and a short circuit developed. A serious fire was averted only because the plant was in operation at the time and the damage quickly detected.

However, the breakdown put four dyeing machines out of commission for two days. It was found that the corrosion was caused by high humidity with subsequent condensation within the conduit of the alkali and acid fumes prevalent in a dyehouse.

CONTINUED ON PAGE 188

Direct-Worker Production

Process	Manhours per doz. prs.
Knit	0.104
Loop	0.143
Inspect and turn	0.048
Bleach, dye, and extract	0.024
Board	0.099
Pair and inspect	0.059
Finish and box	0.065
Total	0.542

Number of Indirect Workers

Fixers	22
Supervisors	23
Material handlers	6
Shipping and receiving	4
Machine repairs	1
Watchmen	4
Stock clerks	3
Building maintenance	3
Total	66

How Do Your Hosiery LABOR COSTS Compare With This Mill's?

▶ A medium-gauge half-hose mill with about 300 workers finds that labor costs are 28.9% of total costs, materials are 58.2%, and other costs are 12.9%

A RECENT SURVEY by the Bureau of Labor Statistics shows some interesting cost and production figures from a men's hosiery mill. You can compare your production costs with this mill's costs to see if you are doing a better job than it is.

The mill described in the survey employs 300 to 350 people and produces about 532,000 doz. pairs of men's hosiery each year. There are more than 200 people classed as direct labor, 66 as indirect labor, and 11 as office and administrative personnel.

Medium-Gauge Half-Hose Made

The product is medium-gauge half-hose made from two-ply combed cotton yarns. The socks are a dip-dyed solid color and have a high-spliced heel.

The plant is located in two buildings. The knitting department and yarn-storage room are in a new building a short distance from the main plant where the bleaching, dyeing, finishing, and shipping departments are located.

All direct operations except bleaching, dyeing, and mending are paid on a piece-rate incentive basis. Costs are broken down into three main divisions. Labor accounts for 28.9% of the total costs, materials account for 58.2%, and other costs total 12.9%.

Yarn is brought into the plant and placed in storage on the second floor of the new building. Yarn is carried by the armload to the knitting machines on the same floor by the knitting-machine operators.

One Knitter for 26 Machines

There are 264 Scott & Williams H.H. and Komet machines in the knitting room. One operator looks after 26 H.H. machines, and the complete sock is made on a machine. Each machine produces about 3.25 doz. pairs of socks in 8 hrs. The manhours required to knit a dozen pairs of socks is 0.104 hrs.

The socks are inspected, tied in dozens bundles, and placed in bags by the knitting-machine operator. The yarn boy carries the bags to the timekeeper, who writes the tickets for the operators and keeps track of their individual production. A boy from the looping department on the lower floor picks up the bags in a hand truck to deliver them to the looping department.

There are 100 loopers. The loopers are 16, 20, and 22 point. The average production of the 24 looping operators working on the socks from the H.H. machines is 56 doz. pairs per 8 hrs. The manhours per dozen pairs works out to 0.143 hrs.

After the toe is closed, a material handler carries socks to the inspection stock bins. The inspectors get their own work from these bins. Inspecting and turning accounts for 0.048 manhours per dozen.

Repairs are taken to the menders, who do not work on a piece-rate system. The menders' production averages about 40 doz. pairs per 8 hrs.

The socks are then moved by motor truck to the stock room in the ground floor of the main building. A boy makes up orders in wooden hand trucks and transports them to the dyehouse on the same floor.

Dyeing Time Is 0.024 Hrs.

Machinery in the dyehouse consist, of seven bleach and dye vats, three extractors, and 19 boarding tables Ten men are employed in the dyehouse, and the manhours per dozen for bleaching, dyeing, and extracting is 0.024 hrs.

The boarding operators help them-

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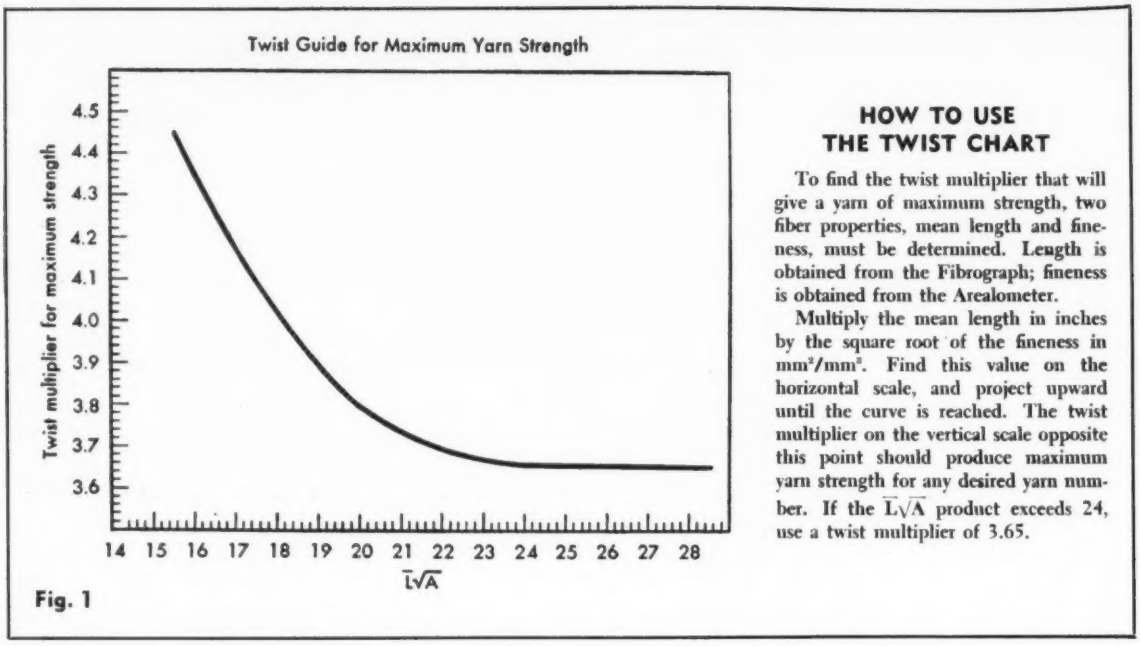


Fig. 1

HOW TO USE THE TWIST CHART

To find the twist multiplier that will give a yarn of maximum strength, two fiber properties, mean length and fineness, must be determined. Length is obtained from the Fibrograph; fineness is obtained from the Arealometer.

Multiply the mean length in inches by the square root of the fineness in mm^2/mm^2. Find this value on the horizontal scale, and project upward until the curve is reached. The twist multiplier on the vertical scale opposite this point should produce maximum yarn strength for any desired yarn number. If the $\overline{L}\sqrt{A}$ product exceeds 24, use a twist multiplier of 3.65.

From Cotton Fineness and Length,

Chart Gives TWIST MULTIPLIER FOR MAXIMUM STRENGTH

▶ A chart for finding the twist multiplier for producing yarn with maximum strength has been developed. To use the chart, two cotton-fiber properties, mean length from the Fibrograph and fineness from the Arealometer, must be determined.

By C. B. LANDSTREET, P. R. EWALD,*
K. L. HERTEL, and C. S. CRAVEN†

THE TWIST CHART for selecting the twist multiplier for maximum strength can be used as a processing guide for present commercial cottons. Developed at the Knoxville spinning laboratory, the chart is based on two fiber properties: fiber length and fiber fineness.

Length Alone Is Inadequate

Maximum strength is obtained in cotton yarns only if correct twist is used in spinning. This twist is a function of the yarn number and the fiber properties of the cotton. In the past, the twist multiplier for maximum strength was based solely on fiber length; and this practice gave good results as long as the length-fineness relationship remained stabilized.

However, through advances in breeding, cottons have been produced with combinations of fiber length and fineness widely different from standard commercial types. In processing these new cottons at the Knoxville spinning laboratory, it was obvious that twist multipliers selected on the basis of length alone were inadequate for producing yarn of maximum strength.

With the introduction of almost any combination of fiber fineness with length, both fineness and length must be considered in selecting the twist multiplier for optimum strength for commercial cottons.

DEVELOPMENT OF THE TWIST CURVE

Test Material

The cottons used in this study were grown in experimental plantings during the 1951, 1952, and 1953 seasons. Included were the new Triple Hybrids, Dwarf Pima, some Acala's, and some standard commercial types. The fiber properties were determined from raw-lint samples, and the cottons were not mechanically altered in any way before processing.

Mechanical Processing

All processing was done on standard textile equipment with the exception of opening, which was done on the

* *Cotton Technologist and Engineer, respectively, in the Field Crops Research Branch, Agricultural Research Service, and The University of Tennessee Agricultural Experiment Station, Knoxville, Tenn., cooperating.*

† *Physicist and Associate Physicist, respectively, The University of Tennessee Agricultural Experiment Station.*

How the Twist Curve Was Developed

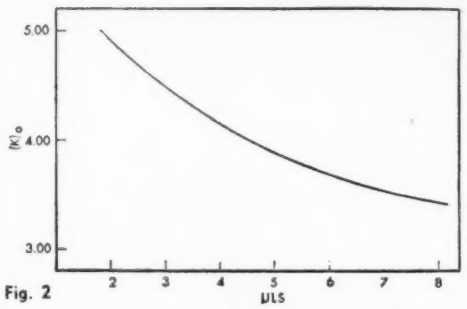


Fig. 2

THEORETICAL CURVE for optimum twist was plotted from Sullivan's equations.

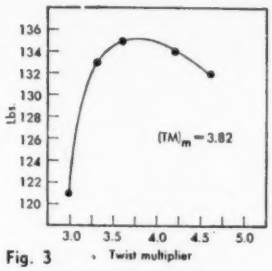


Fig. 3

TWIST-STRENGTH CURVE was developed for each cotton used in the study.

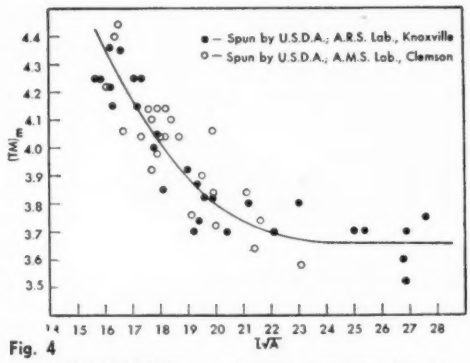


Fig. 4

CURVE CLOSEST to optimum curve was found when (TM)m was plotted against $\overline{L}\sqrt{A}$.

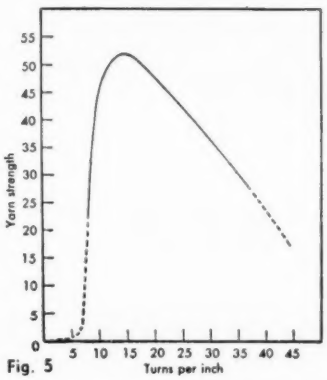


Fig. 5

ASYMMETRICAL SHAPE of twist-strength curve contributes to deviations from optimum curve.

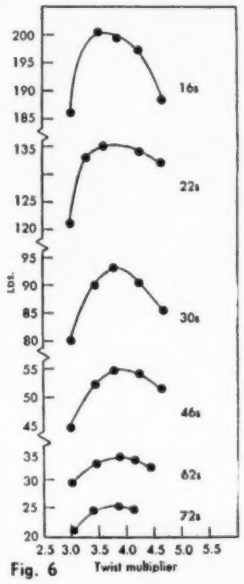


Fig. 6

TWIST - CURVE CHECK on six yarn numbers verified the square-root law for practical applications.

laboratory's new miniature cotton opener designed to handle small samples. Card speeds and settings were taken from the manufacturer's handbook on carding. Six doublings and a draft of six were used on both breaker and finisher drawing. The draft distribution on the Whitin* Superdraft roving frame for all roving was allotted according to the draft guides developed by Corley and Simpson. All spinning was done on a Whitin long-draft spinning frame. The spindle speed was 9,300 rpm. with a 1½-in. ring. All roving was double creeled for spinning.

Testing

All yarn tests were made on a pendulum skein-twisting machine with a capacity of 300 lbs. Previous to breaking, the skeins were stored for 24 hrs. at standard atmospheric conditions.

* *The mention of trade products does not imply their endorsement by the Dept. of Agriculture or The University of Tennessee over similar products not mentioned.*

The Twist Curve

The approach to the problem of the effect of fiber length and fineness on $(TM)_m$ for cotton yarns was based on previous work done at the University of Tennessee by R. R. Sullivan. In his theoretical investigations of fibrous yarn strengths, Sullivan developed equations from which it was possible to obtain $(TM)_m$. The equations contained fiber properties such as mean length, fineness, friction, drag, and fiber strength, but not maturity, crimp, extensibility, or elastic modulus.

Fiori and Brown showed that fiber fineness (other properties being equal) affects the twist multiplier for maximum strength in various yarn numbers.

In Fig. 2, the curve shows the theoretical relationship between the twist multiplier for maximum strength and the product of the fiber length, fineness, and friction for a given drag and fiber strength. Experimentally determined twist multipliers do not correspond exactly to this curve.

To develop a working length-fineness-twist relationship, experiments were conducted on 52 samples possessing a wide combination of length and fineness. The first step was to develop twist-strength curves for each

CONTINUED ON PAGE 213

DEFINITIONS OF TERMS

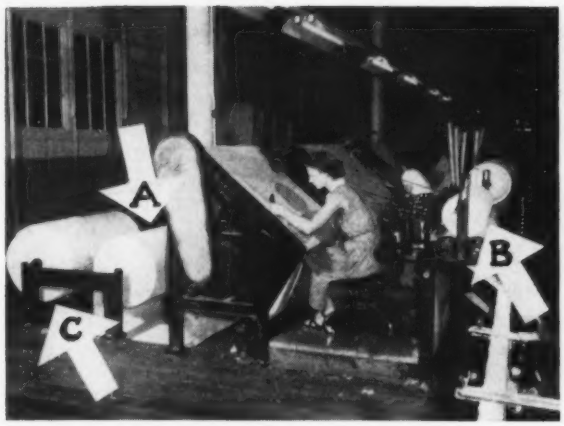
Fiber length: Fiber length $\overline{L}$ is the mean fiber length in inches as obtained from the Fibrograph.

Fiber fineness: Fiber fineness A is the ratio between the average perimeter and the average cross-sectional area of a fiber. When each part of this fraction is multiplied by fiber length, the fineness measurement becomes specific area. The units are mm^2/mm^3. A is obtained with the Arealometer.

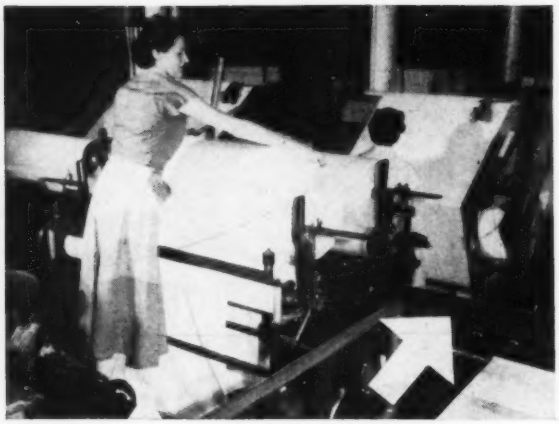
Twist multiplier: The twist multiplier TM is defined by the equation:

$$TM = \frac{\text{Turns per inch}}{\sqrt{\text{Yarn number}}}$$

Twist multiplier for maximum strength: This particular twist multiplier, written $(TM)_m$, is the TM that will produce maximum yarn skein strength for the fiber properties under consideration.



NEW INSPECTING MACHINES cut out waiting time. Cloth from Roll A passes over the inspecting table, under the bridge on which the inspector sits, and to the wind-up roll at B. Roll C is in reserve; as soon as Roll A is finished, C will be moved into its place.



DOFFING CLOTH is easy. Here, Operator Helen Berry has just pulled two 4-in. pins out of the stands at each end of the cloth-roll tube and is now pushing the roll of cloth onto the conveyor belt (arrow). The belt will move the cloth to a storage platform to be trucked away.

Beaumont's NEW CLOTH ROOM Gives Better, Cheaper Inspection

► The cloth-room building was expanded to make room for more inspecting machines. Better cloth handling eliminated several indirect-labor jobs so that more inspectors could be added to operate the machines.

► Net labor saving: One second hand and two cloth handlers.

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

THE ENLARGED and modernized cloth room at Spartan Mills' Beaumont plant has resulted in closer cloth inspection and has eliminated one complete shift.

Under the old setup, the cloth room was operated three complete shifts with 15 inspectors on each shift. Each inspector operated an inspecting machine.

Several rolls of cloth were stitched together to form rolls about 18 ins. in diameter. These rolls of cloth were supplied to the inspectors by three men on each shift. After the cloth was inspected, the men removed the inspected rolls.

Employees on the third shift were supervised by a second hand.

The total cloth inspected under this setup was 600,000 yds. per week.

Third Shift Is Eliminated

Now the third shift is completely eliminated. There are 24 inspectors on each of two shifts. Two men on each of the two shifts lay up gray cloth to be inspected, and the cloth is removed by a conveyor belt. The cloth for inspectors is still in stitched rolls.

Five men helpers were placed on other work outside the inspection operation. A third-shift second hand was also placed on other work, making a total of six men placed on other jobs.

The number of inspectors was increased from 45 to 48. Even with this increase in the number of inspectors, the wages of three men are saved.

The advantages of the increase in the number of inspectors are:

1. Cloth is graded more closely.
2. More burling is done.
3. The amount of cloth inspected is still 600,000 yds. per week.

The new method of inspection was made possible by increasing the floor space, adding nine inspecting machines, and rebuilding the old machines.

The cloth on the original machines was placed in stands mounted on the floor behind the machine, run over an 8-ft.-high framework and down over the inspection surface of the machine, and back under the frame, where it formed another roll between the machine and the original roll.

The inspected roll of cloth had to be removed by a man and another roll put in the stand and threaded over the framework before the inspector could begin work. This practice caused a lot of waiting time.

Remodeled Machines Reduce Work

The framework was removed from the cloth machine, and a bridge was added at the front of the machines. A single rectangular stand at the back of the machine holds two rolls of gray cloth.

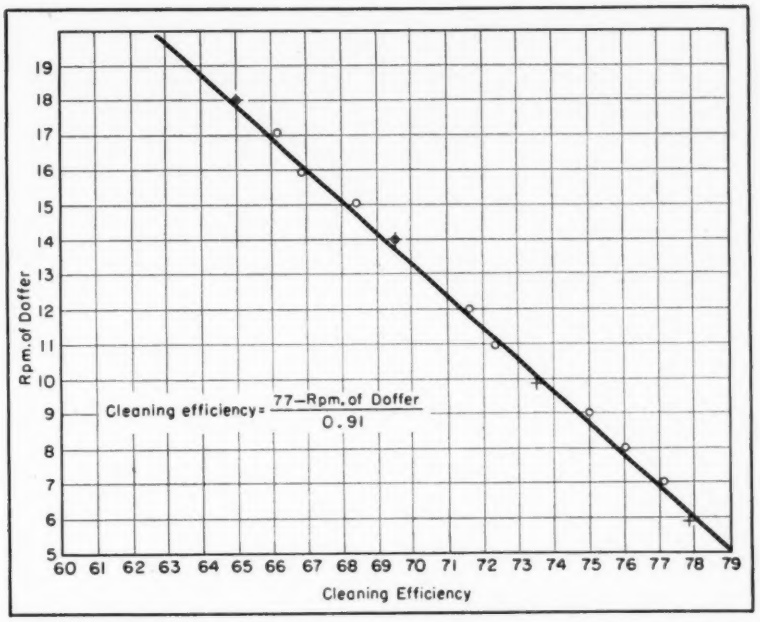
The first roll of cloth next to the

CONTINUED ON PAGE 176

How To Maintain COTTON-CARD Efficiency

- ▶ The "carding number" is a more-accurate measure of carding than doffer speed
- ▶ Cleaning efficiency depends to a large extent on settings of lickerin to feed plate and flats to cylinder, plus condition of card
- ▶ Other points: space stripping cycles further apart to decrease cylinder-strip waste; grind light and often; periodically grind from underneath

By N. H. POMFRET



COTTON-CARD EFFICIENCY at any practical doffer speed can be shown by a graph like this one made from the results of a series of tests with a Shirley Analyzer. Plotted results should show a fairly straight line.

IT IS COMMON MILL PRACTICE to describe the working intensity of the cotton card in terms of the doffer speed; the lower the speed, the better the carding. Experience has proved this rule to be an excellent measure in comparing similar cards, but it is inadequate for comparing cards of different makes. And there are other points to consider. For example, diameters of doffers are not standard; both 27- and 24-in. doffers are in common use.

Intensity of Carding

The most important feature of the card is the fiber isolation produced by the high draft between the feed roll and the lickerin; this feature accounts for the high cleaning efficiency claimed for higher lickerin speeds.

Changing the pulley on the end of the lickerin is one way of increasing the draft between these two elements without changing the total draft of the machine. Another way of increasing this draft is to decrease the speed of the feed roll. The total draft remains the same if a proportional decrease is made in doffer speed.

Any reduction in doffer speed made by changing the production gear must necessarily be accompanied by an increase in draft between the feed roll and lickerin, with a corresponding decrease in draft between the cylinder and doffer. Since cylinder speeds have, for all practical purposes, become standardized between 160 rpm. and 170 rpm., the doffer speed is an approximate measure of fiber isolation at the lickerin. However, a more-accurate measure is the "carding number."

This number is the reciprocal of the draft between the cylinder and the doffer, and it is in direct proportion to the draft between the feed roll and the cylinder with:

50-in. cylinder revolving at 165 rpm.
27-in. doffer revolving at 10 rpm.

$$\text{Carding number} = \frac{50 \times 165}{27 \times 10} = 30.6$$

If the doffer speed were reduced to 8 rpm., experience leads us to expect better carding. The carding number in such a case would be:

$$\frac{50 \times 165}{27 \times 8} = 38.2$$

Cleaning Efficiency of Cards

Some simple experiments of practical value can be made with the Shirley Analyzer to determine the most economical speeds of flats, doffers, and lickerin. Such experiments must be done in the mill because the cleaning efficiency of the card is largely dependent on the distances between the lickerin and feed plate and between the cylinder and flats and on the condition of the card clothing. The settings must be as close as practical for maximum cleaning efficiency.

Experiments with the Analyzer show the importance of the opening and cleaning line. The card extracts a percentage of the trash in the lap, and this percentage depends on the operating conditions and the trash content of the lap; but the card's efficiency remains the same as long as the settings, speeds, and wire conditions are unchanged. Thus, if the cleaning efficiency of the card is 75% and the trash content of the lap is 5%, the trash content of the card sliver will be 1.25%. If the trash content of the lap were 2%, the sliver would have a trash content of 0.50%.

Increase Stripping Cycle

A simple way to reduce cylinder-strip waste is to space stripping cycles further apart. For example, suppose the cylinder is stripped after producing 12 lbs. of sliver and the weight of the strips, expressed as a percentage of sliver, is 4%. If you then produce 24 lbs. of sliver from the same stock

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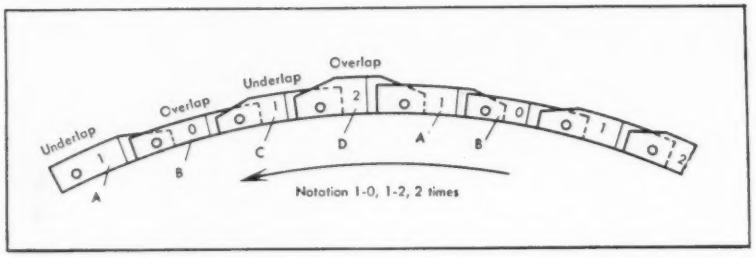
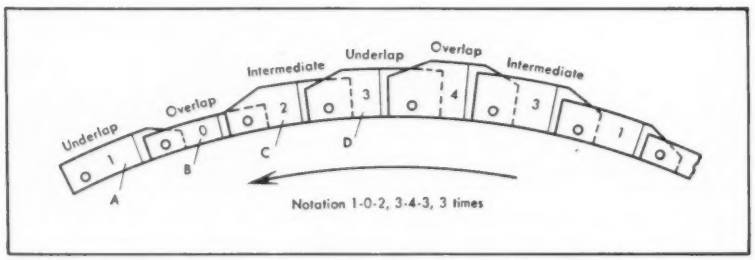
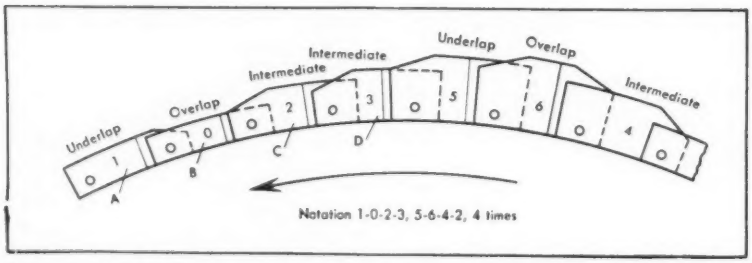
How To Get Versatility With TRICOT PATTERN CHAINS



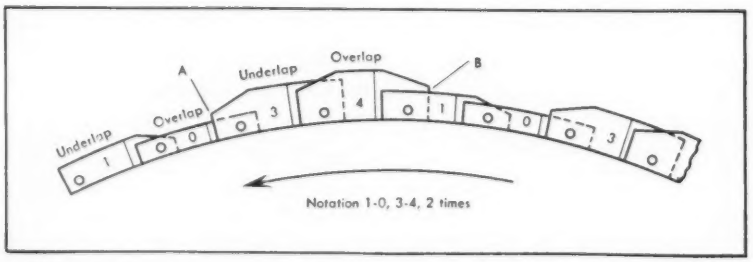
CHAIN SETTING FOR TWO TIMES has underlaps across one needle only. The first link *A* produces the underlap and link *B* produces the overlap. Link *C* has an up-going slope and link *D* has up-and-down-going slopes.



CORRECT CHAIN SETTING for 1-0, 3-4, pattern is in three times. Link *A* is the underlap, link *B* is the overlap, link *C* is the intermediate link, and *D* is the underlap link for the second stitch.



A FOUR-TIMES MOVEMENT is used on underlaps of five needles. Links *C* and *D* are the intermediate links. These links can be of other heights provided the difference between them does not exceed two numbers.



DON'T . . construct this chain for a 1-0, 3-4 pattern. Rough passage of the roller would result because the high steps at *A* and *B* would cause the roller to jump. Faulty fabric would be made.

To obtain maximum efficiency in scope of design and speed of production of tricot fabrics—

- **Lay chain out on a board**
- **Use two-, three-, and four-times movements**
- **Time chain to guide bars correctly**

By FREDERICK SCHMIDT
Regent Knitting Mills Ltd.

PATTERNED WHEELS are best suited for plain tricot fabrics because they provide smoother running and higher speeds than pattern chains. However, for fancy tricot fabrics, the pattern chain is more economical and efficient. The wheel is limited to rather small pattern repeats, the repeat length is dependent on the wheel circumference, and a new pattern wheel must be cut to suit the new design.

Pattern-chain repeats are theoretically unlimited, but designs are usually made with a repeat up to 96 courses, although repeats greater than 96 courses can be made successfully. The setting up of a new chain can be done in a short time. The chain links can be changed at no cost unless new ones must be purchased to make extra-long patterns.

New machines are generally supplied with pattern wheels unless a pattern-chain drive is asked for. Most tricot machines can be converted from one system to the other.

The chain drum and the pattern links are the main parts of the pattern-chain mechanism. The chain drum has two or three grooves around its circumference. These grooves accommodate the pattern wheels and the number of grooves correspond to the number of guide bars on the machine.

Links Are Numbered 0 to 48

The pattern links are the individual members of the pattern chain. The link sizes decide the pattern to be produced. The lateral movements of the guide bars are obtained by the

difference in height of the links. The links are numbered from 0 to 48.

Links are made in four shapes. They are: (1) straight, (2) up-going slope, (3) down-going slope, and (4) up-and-down-going slopes. The slopes smooth the passage of the roller between links of different heights.

A sufficient quantity of links should be kept in stock to produce any desired design. The gauge of the link should correspond to the machine gauge because links of different gauges are not interchangeable.

The links are connected by link pins, and the pattern chain must have a minimum of 48 links to encircle the main drum. If a longer chain is needed, it should be guided around idler wheels underneath the chain drum or over a special stand.

The links must be connected so that the forked ends of the links lead in the direction of the rotation of the drum.

How To Make a Chain

Here's an easy method of constructing a chain: Make two or three $\frac{1}{8}$-in. deep grooves on a long board. Cut the width of each groove to the width of one link. The distance between the grooves should be identical to the distance between the grooves in the chain drum.

If the chain is for a pattern mechanism on the right side of a machine, start the chain construction with the back bar. Begin at the left side of the board in the back groove. For left-hand machines, start at the right side of the board in the back groove.

Lay out the chain according to the pattern notation, and connect the links with pins. The chains can now be slipped on the drums.

The pattern-drum circumference accommodates 48 links because this number is divisible by 2, 3, 4, 6, 8, 12, 16, and 24. Pattern repeats of these numbers can encircle the drum without using long chains or idler wheels. Working with two, three, or four links per knitting cycle is possible. This technique is known as two times, three times, and four times.

Why Two-Times Chain Construction Is Necessary

Using a different number of links for one course is important because the guide-bar tranversing motion and the speed of the machine depend on it.

Here is why pattern chains with two-times construction are made:

The underlap on a 1-0, 1-2, chain is across one needle only and makes the use of two links per course possible. The first link of the repeat is of height 1 to make the underlap with a down-going slope to the second link of height 0 to produce the overlap of one needle space.

The 0 link is always straight. The next link is of height 1, but with an up-going slope. The next link of height 2 has up-and-down-going slopes.

These four links complete a repeat on two courses. To encircle the drum completely, the chain consists of 48 links, or 24 courses, or 12 times the repeat of 1-0, 1-2.

Why a Chain Setting For Three Times Is Necessary

The slope angles of the links are usually only sufficient to connect links where differences in height do not exceed two numbers. A chain for two-times movements is not advisable for patterns with guide-bar movements of more than two needles because the guide-bar roller passage is not smooth. The strain and the shock on the threads result in faulty fabric.

An additional link is placed at places where the high steps occur to eliminate shocks to the guide bar and to provide smooth and easy running. Where a 1-0, 3-4, construction is to be made, the first link will be the underlap, the second link will be the overlap, and the third link will be the intermediate or assisting link to smooth the passage of the roller. The intermediate link does not take part in the actual knitting action, although all three links pass under the guide-bar roller.

Once one course has been set for three-times movements, the remainder of the chain must be made the same, even though there may be only one long underlap that requires an intermediate link in the whole pattern. It may happen that in some courses of the repeat that have an underlap of only one needle, the intermediate link will be the same height as the next link. This link serves no other purpose than to keep the setting in three times throughout the chain.

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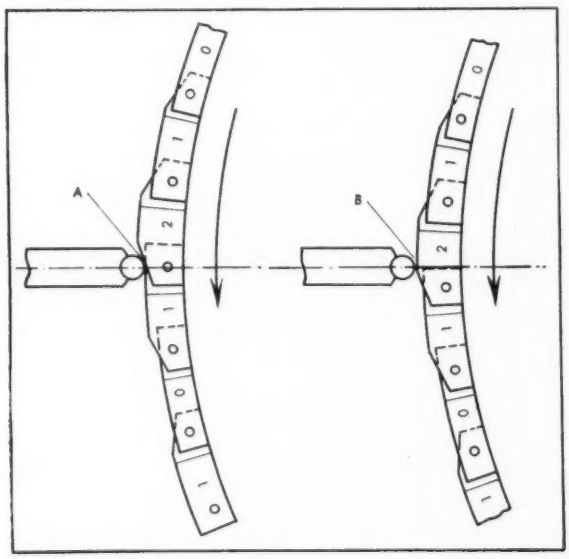
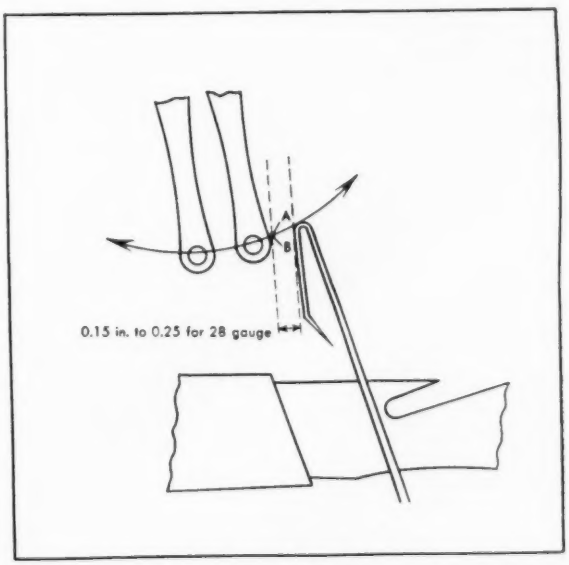
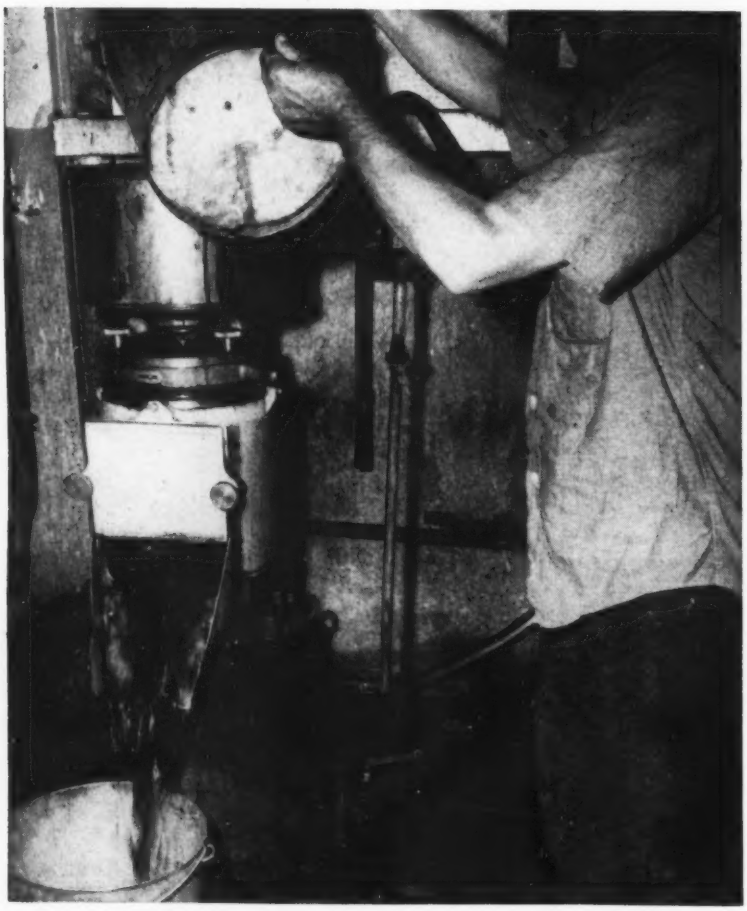


THE ROLLER at the start of the slope at *A* should coincide with the guide setting behind the needle. When the guide bars return to their original position, the roller should have completed the overlap at *B*.



THE GUIDES should be swinging back when the rollers of the push rods are at the start of the slope between the underlap and overlap link. The distance between the needles and guides should be about 0.020 in.

STAINLESS-STEEL TRUCKS separated into compartments make it possible to simultaneously load and unload dyebecks with 5 to 20 strands of cloth. The strands, 60 to 70 yds. long, are wound into the dyebeck, each from an individual truck compartment holding one to three strands. On being unwound from the other side of the dyebeck, the strands are again placed into separate compartments.



A COLLOID MILL is used for mixing dyes. The revolving disks in the machine do an excellent mixing job; and the machine eliminates the use of screens or straining rags, reduces labor, and speeds service to the dyer.

Tips on

▶ Here are some useful kinks developed at the Hopewell, Va., plant of the Celanese Corp. of America for dyeing and finishing acetate fabrics. The techniques were designed to improve quality and lower costs.

By MICHAEL LONDON
Assistant Editor, TEXTILE WORLD

▶ A singer and Hinnekins boil-off machine in a line are used to singe, set, and boil off the fabric in a continuous operation. The arrangement eliminates temporary storage between the operations and makes it possible for one man to operate the equipment from singeing to the boil-off.

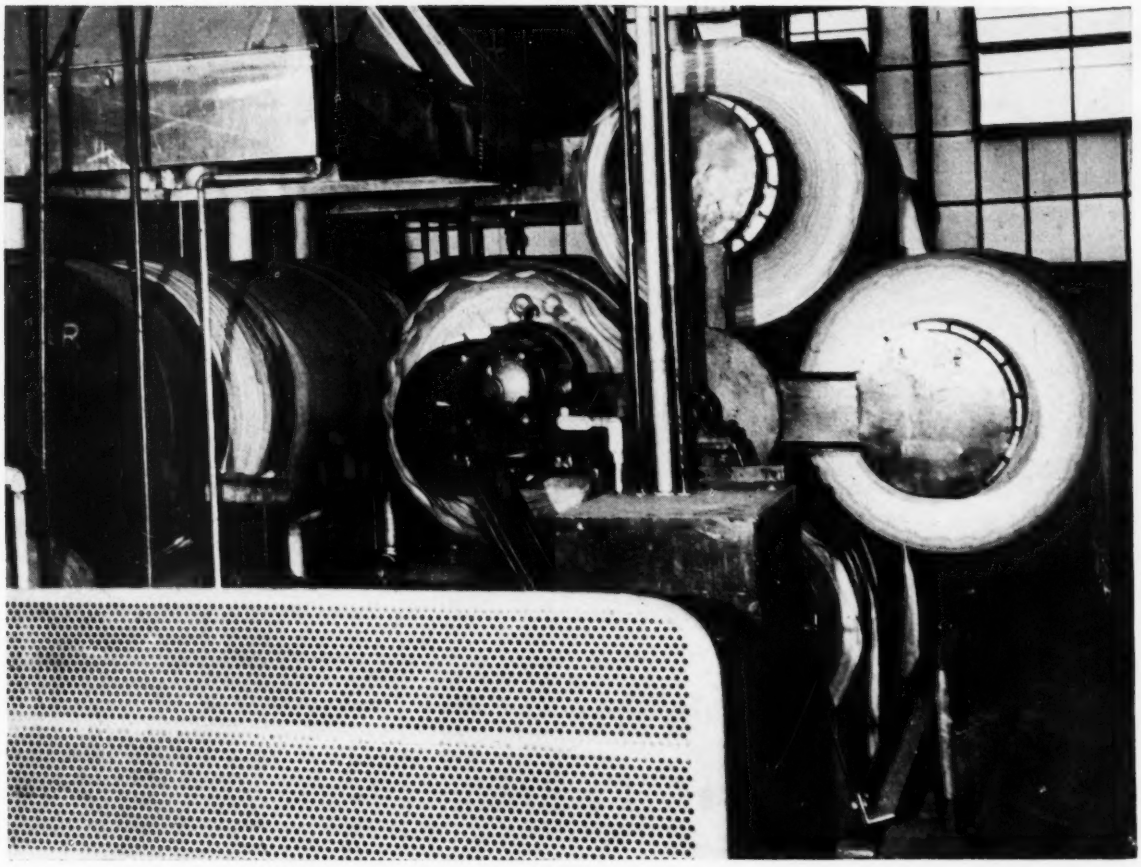
▶ All jigs are equipped with vacuum extractors to eliminate the waterlogging of cloth removed from the jig. The jigs are all enclosed.

▶ Silicones are considered one of the best finishes for acetate. They are used for a permanent water-repellent and spot-resistant finish. Silicones also increase abrasion resistance.

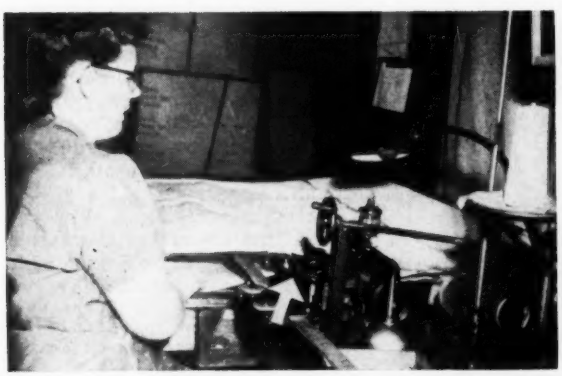
▶ Aluminum cores are used exclusively for batching fabrics for dyeing. The cores are light, require low maintenance, do not warp, and do not color.

▶ A Telescriber is used to transmit dye and chemical requisitions from the jig dyeing office to the drug room. The person requisitioning the supply writes the request on the Telescriber, and the message is automatically transmitted to a machine in the drug room.

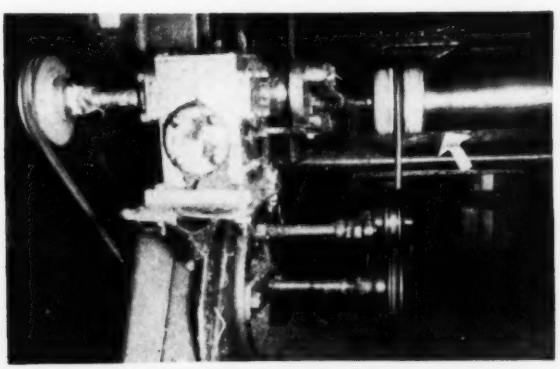
DYEING and FINISHING Acetate Fabrics



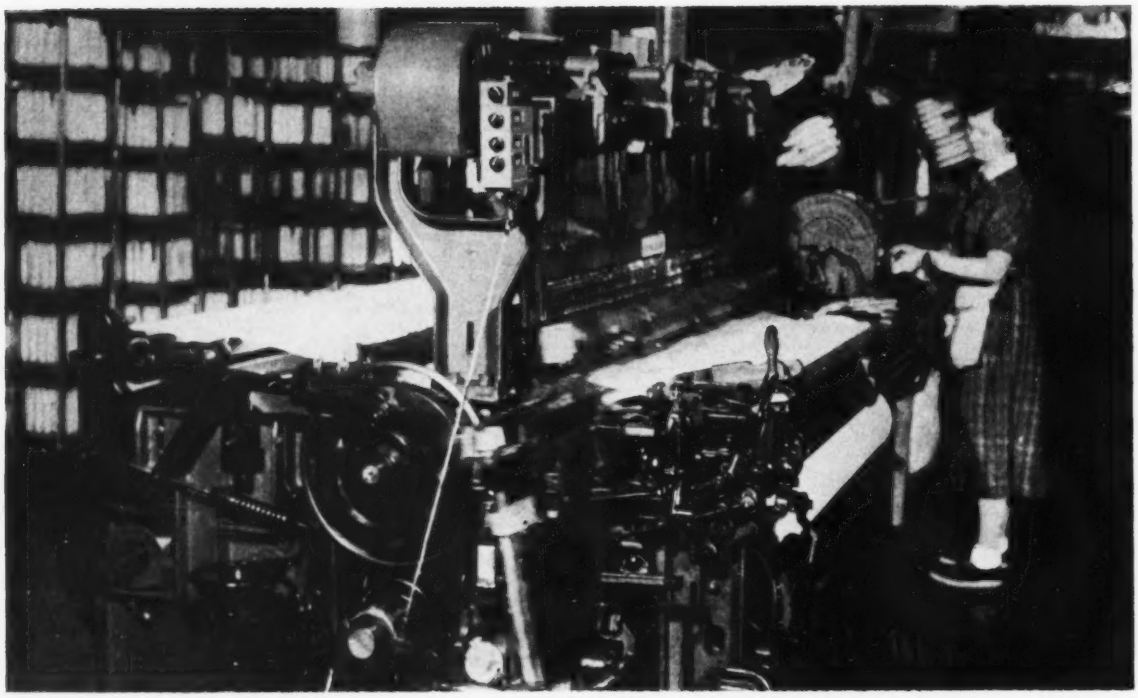
FOUR REELS attached to a regular semidecating unit carry decating blankets used for fabrics of different colors. The attachment prevents the discoloring of the cloth being processed. The appropriate reel is placed into position by a motor. Constant tension at the take-off end prevents the stretching of crepes.



A WHIRLING BELT removes the curl from the edges of tricot fabrics being sewn in tubular form to keep the strands from twisting on the dyebecks. The whirling belt (arrow) passes between the edges of the folded fabric; and the motion of the belt, opposite to the direction of the curled edges, removes the curl.



AN OSCILLATING DEVICE on a cloth winder keeps heavy selvages from building up and being stretched or turned over. The oscillating bottom roll (arrow) causes the selvages of the cloth to be laid in slightly varying positions on the batch roll. An off-center lever on which the roll is mounted causes the oscillation.



RAYON DUCK, weighing 14.90 and 16.50 oz., is woven on Draper XP and XD looms equipped with two clock-spring tops. The main strength of the cloth is in the 2,200-den. high-tenacity filament warp.

How West Point Weaves RAYON-DUCK Fabrics

▶ **Stronger, lighter ducks for such uses as conveyor belts are woven at West Point Mfg. Co. from synthetic fibers, principally high-tenacity rayon**

▶ **Main problems are handling, cleaning, and maintaining closer loom settings**

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

THE DEMAND FOR STRONG, lightweight ducks for conveyor belting has led to weaving ducks of synthetic fibers at West Point Mfg. Co.'s Shawmut mill at Shawmut, Ala.

The fiber used most in the new lightweight fabrics is high-tenacity filament rayon; but other fibers used are filament nylon and combinations of nylon and cotton, rayon and cotton, and nylon and rayon.

Rayon Duck Is Stronger

Fabrics woven from these fibers have the following important features: high breaking and tear strength; lightweight and less bulk; high elasticity, porosity, and permeability; resistance to abrasion and wear; and resistance to heat and chemicals.

Processing of yarns and weaving methods for the synthetic-fiber fabrics are different from those used for cotton fabrics. Yarns for filament-rayon warps, for example, are received on beams and are twisted onto spools. Deniers of 1,650 to 2,200 are used. Both ply yarns and single yarns are twisted, and the twisted warp yarns are rewound on automatic spoolers and beamed on high-speed warpers. In most cases, slashing is unnecessary; but the mill is equipped with two slashers built to slash synthetic-filament-fiber yarns.

The filling yarns are also twisted and rewound on automatic winders, but the belting ducks are made with the strength predominantly in the warp.

New Looms Weave Rayon Duck

A choice of looms is available, but most synthetic-fiber fabrics are woven on XP and XD Draper looms only a few months old. In general, loom settings for the synthetic-fiber

ducks are much the same as those for synthetic-fiber apparel fabrics run in the same weave room.

Since new warps of rayon are much harder to start weaving correctly in the looms than cotton warps, close settings of stop motions, harness timings, warp tension, and other loom parts must be made.

All looms weaving synthetic-fiber duck transfer the filling bobbins automatically, and each loom is equipped with two clock-spring tops. The looms on duck fabrics are mixed in with looms weaving other types of synthetic-fiber fabrics.

The number of looms per weaver runs as high as 18. Loom speeds, both XP and XD looms of equal width, are 152 ppm. for 64 in. XDs and 165 ppm. for 44-in. looms.

Cleaning Is the Big Problem

One particular problem on rayon-duck fabrics is keeping the cloth clean. A thorough system is used to clean harnesses, reeds, and drop wires when they are removed from the loom. All these parts are dipped in a tank of cleaning solvent and dried with an air hose and infrared lamps. Harnesses, reeds, and drop wires are cleaned in the loom at each cut mark.

A false selvage end is woven at each edge of the cloth to take the strain off the yarn. The false end is made of music wire or a coarse multifilament-rayon yarn.

To arrange the false end, a cord is run through the edge of the stop-motion stand and threaded through two drop wires. Music wire is tied to the cord and threaded through a hole punched in a 1-in. strip of leather fastened vertically in a stationary position at the edge of the harnesses. The music wire is then placed through an opened dent in the reed and through the temple at the outside end of the temple rolls. As the cloth weaves down, it slides off the music wire. If the wire breaks, the drop wires fall and stop the loom.

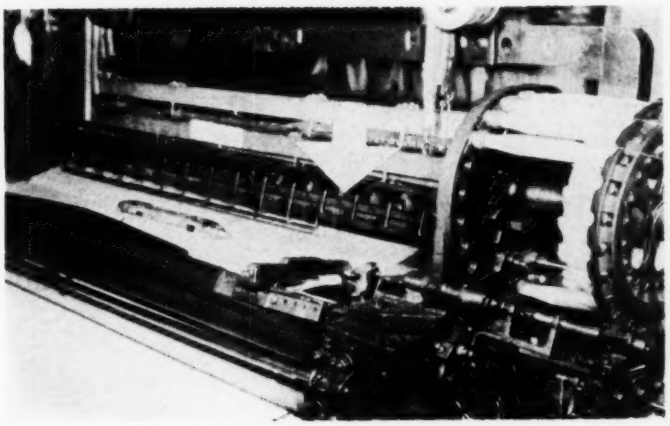
Multifilament rayon is being substituted for the music wire because broken pieces woven into the cloth are not dangerous to cloth-room employees.

Rayon Duck Is Lightweight

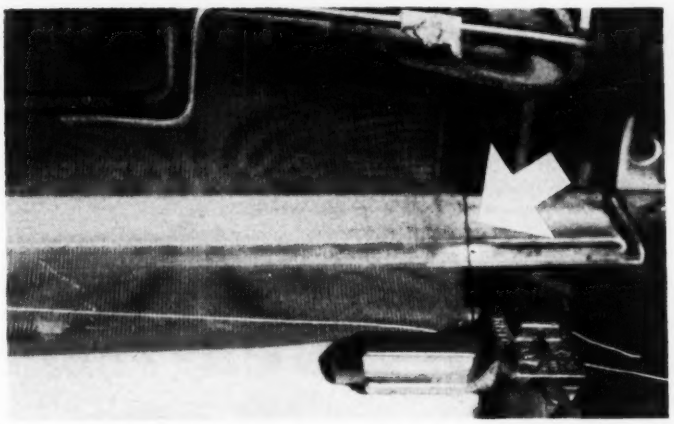
Typical rayon-duck constructions are: 16.50 oz., 36 ins. wide, 34x16, 2,200-den. warp and 2,200-den. filling; and 14.90 oz., 36 ins. wide, 23x24, 2,200-den. warp and 2,200-den. filling.

Most duck cloth for conveyor belting is made to specifications for each customer. All synthetic-fiber ducks are made to order. Since the fabric is not stocked, each type of fabric is graded to the customer's specification.

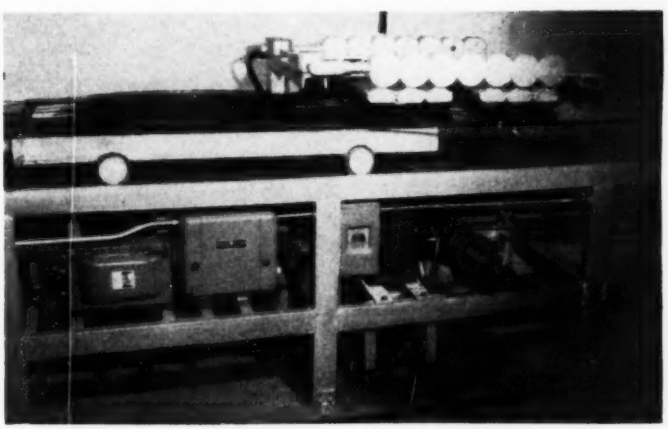
WEAVING KINKS Used at West Point



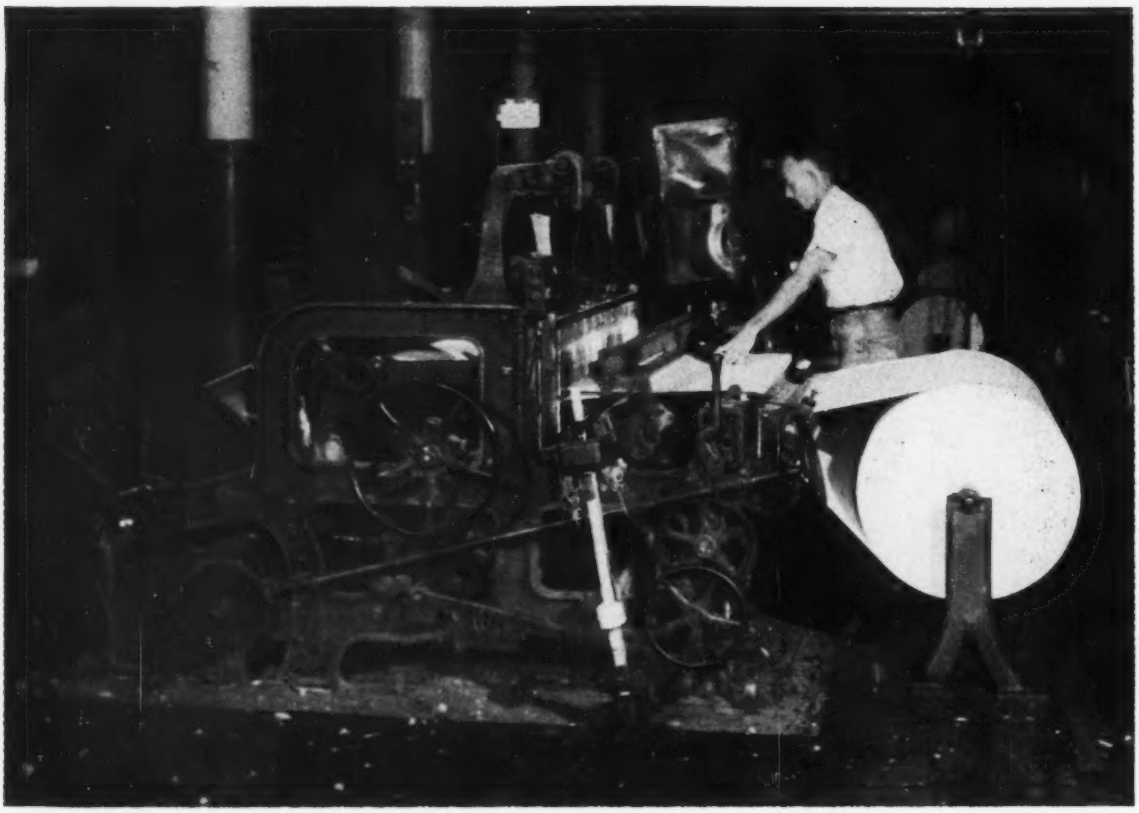
FLYING SHUTTLES are prevented by steel guards welded to the handrail.



FALSE SELVAGE woven with music wire or rayon eases cloth strain.



HARNESSES are cleaned in solvent and then dried under infrared lamps.



HEAVY COTTON DUCK, woven on C&K single-shuttle looms, weighs 32 oz. On this loom and construction, weavers change shuttles by hand when a bobbin of filling runs out. Four looms are assigned to a weaver.

COTTON-DUCK Fabrics At West Point Mfg. Co.

▸For its cotton-duck fabrics, West Point uses both C&K and Draper looms, some hand-transfer and some automatic-transfer.

▸Loom widths range from 36 ins. to 72 ins.

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

Cotton ducks at West Point Mfg. Co.'s Shawmut mill are woven on Crompton & Knowles single-shuttle duck looms and Draper modified-D looms. Typical constructions range from 23.3 oz., 42 ins. wide, 32x17, 7/3 warp and 6.41/4 filling to 32 oz., 42 ins. wide, 23x13, 7/7 warp and 6.47/5 filling.

Width of the C&K looms is 36 to 72 ins. Shuttles are changed by hand, and loom speeds and weavers' jobloads vary with the loom width and cloth construction. A 64-in. loom runs at 148 ppm, and a weaver operates four looms. Styles of cloth are arranged so that a weaver on a four-loom set has three light and one heavy duck patterns.

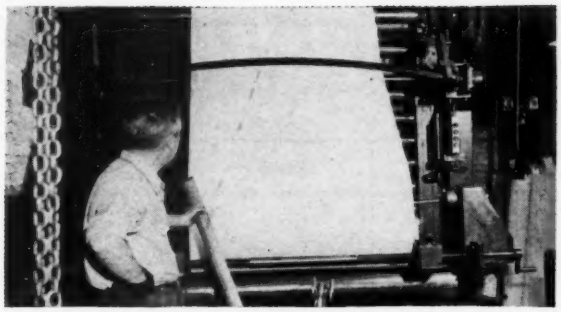
The V-belt drives on the C&K looms were made in the machine shop at Shawmut. They are so rugged that they do not slip even on the heaviest duck weave.

Cloth Is Woven in 36-in. Rolls

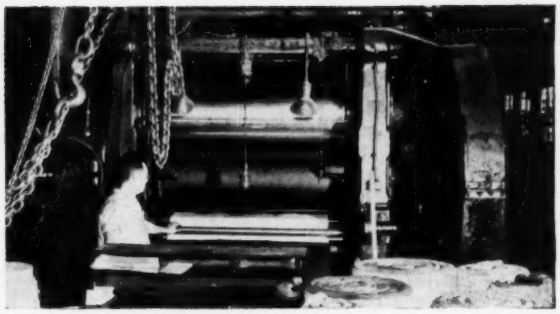
Rolls of cloth up to 36 ins. in diameter are woven, and all warp beams and cloth are doffed with hoists mounted on monorails. Unless patterns are to be changed, warps are tied in at the loom.

Draper modified-D looms range in widtn from 32 to 72 ins. Looms 64 ins. wide operate at 150 ppm. Filling bobbins are changed automatically.

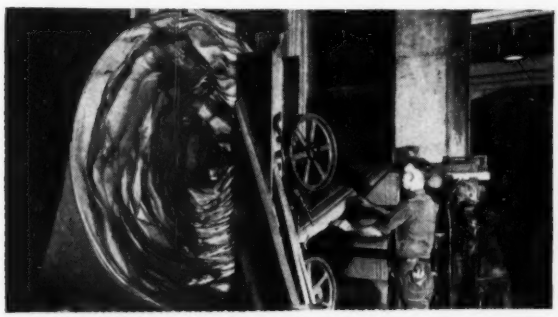
Cloth woven on automatic looms is sheared by machine in the cloth room. Filling ends on looms with hand-changed shuttles are clipped so closely by the weavers that the cloth does not have to be sheared. Cloth is inspected on machines and kept in rolls.



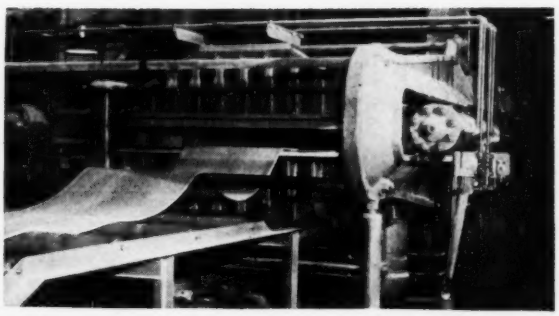
DRYING is the first process when ducks are made into conveyor belting. The fabric must be bone dry before it's coated with the latex compound. Moisture left in the fabric would evaporate and make bubbles during the vulcanizing process.



FRICTION COATING is added to the dried duck. The coating is a sticky latex compound used to impregnate the fabric. After the friction coating is placed on the duck, a skim coat of lighter latex is added. Heavy-duty calenders do the job.



LAMINATED BELTING is being run to the curing and stretching press. The belting goes to the front, and a separating cloth is being removed and rolled up at the back. The layers of rubber-treated duck were placed together on making tables.



STRETCHING AND CURING are done in one process. Huge jaws grip the belting, and one set of jaws stretches it 5% before it is cured. The belting runs through in an endless process to form finished rolls as large as 10 ft. in diameter.

How Duck Conveyor Belting Is LAMINATED and COATED

Layers of duck fabric, coated individually, are laminated to the desired belt thickness. Coatings applied to the belt include a—

- **Friction coat**
- **Skim coat**
- **Finish coat**

By GEORGE M. MOISSON

STRONG, LIGHTWEIGHT DUCK made of synthetic fibers solves many of the problems of special belts, especially the problem of flexing, because it has less bulk.

The specifications for the ducks Hewitt-Robins, Inc., uses for conveyor belts are determined by the end use of the completed belting. For example, the cover of a conveyor belt for general heavy-duty service made from 28- to 48-oz. cotton duck must have an average strength of 2,500 to 3,000 psi. and an average friction pull of 16 to 19 lbs. per in. The porosity factor must also be such that the friction compound and skim coat will impregnate the fabric properly.

The cover of a similar belt made of high-tensity rayon has an average strength of 3,500 to 4,000 psi. and an average friction-pull factor of 20 to 24 lbs. per in.

The strength of the finished belting depends entirely on the strength of the duck that goes into it.

How Conveyor Belts Are Made

At Hewitt-Robins, the carcass of the belt usually consists of laminated layers or plies of duck. These layers are coated individually with a sticky rubber or neoprene friction compound that penetrates the plies of the duck. The compound contains a high percentage of plasticizer to permit better penetration into the plies.

The plies are then coated with a thin layer of rubber or neoprene compound for a skim coat. The skim coat is similar to the friction coat but is

CONTINUED ON PAGE 180

Checklist for COTTON CARDING

Condition	Result	Remedy
Brushes		
Worn or dirty	Flats not properly cleaned. Milled ends of flats become dirty, are held from proper setting, cause neppy carding	Check brushes when cards are ground. Clean dirty brushes and replace worn ones
Clothing		
Broken or worn wire Spongy clothing Foundation separated	Neppy and cloudy carding, poor-quality yarn	Settings must be perfect. Grind evenly and not too heavy. Surface of cylinder and doffer must be true. Watch for thick places in roving
Coilers		
Dirty, or oily coiler	Dirty, oily work	Better cleaning system and more care with oiling
Dirty coiler tube	Sliver does not pass through freely	Polish inside of tube with a piece of flannel wrapped around a broom handle and dipped in whiting
Comb Boxes		
Leaking oil	Oily work and loss of oil	Overhaul and wash out comb boxes once a year
Cylinder Side Disks		
Oily disk	Oil gets into clothing and causes a loose foundation	More care in oiling. Tenders should keep excess oil wiped off

Condition	Result	Remedy
Doffer Combs		
Worn or dirty ends	Cotton collects on comb and causes ragged web selvages and uneven sliver	Clean and smooth out ends when card is ground
Driving Pulleys		
Loose pulley	Worn cylinder shaft	Check when card is ground
Feed Rolls		
Worn necks and bearings Flutes lapped with fly and dirt	Feed rolls don't grip fibers firmly. Lickerin takes cotton away in bunches; cloudy and uneven carding	Make sure feed rolls are kept clean. Check oiling maintenance
Feed-Roll Clearers		
Missing or dirty cloth	Feed rolls lapped with fly	Keep clearers covered and clean
Flats		
Milled ends dirty	Uneven grinding of flats and neppy carding	Keep brushes clean and in good condition
Flat Bowls		
Stuck bowls	Worn worm gears	Oil enough to keep free
Grinding Rolls		
Worn or oily emery rolls	Poor grinding, broken wire, and hooked points. Poor carding	Re-cover rolls after grinding 10 to 15 cards for traverse grinding rolls and 30 to 35 for drum grinding rolls

Additional Tips for Carding

Reclothing the Card

Clothing should be put on tight. Round-head tacks should be used on the doffer, and no unnecessary wire should be taken out at the tail ends. Before the clothing is put on, the surface of the cylinder and doffer should be checked for trueness. If the surfaces are not true, they should be surface-ground.

Some mills paint the cylinder and doffer with a gold size, which keeps the clothing from sideslipping and gives the clothing a firm foundation. Formula for size: 2 lbs. white lead, 1 pt. turpentine, ½ lb. gold size.

Oiling Flat Chains

To oil flat chains, place them in a pail of oil for 24 hrs. The oil will work into the links and link bushings. Then hang the chains over a pail for two days to allow the oil to drip off. Wipe off the excess oil.

Flat-Strips Gauge

Light strips cause neppy work and weak yarn; heavy strips cause too much waste.

Take one card and set the front plate until you get the weight of strips you want; then make a gauge for this setting. Set all cards with this gauge.

▶ Here is a list of items to watch in carding. The items have been alphabetized and broken down into condition, result, and remedy. Some additional tips are given, and a suggested oiling schedule is included.

By JOHN E. ALLEN

Condition	Result	Remedy
Flat-Grinding Motion		
Dirt under catch	Flats not held in grinding position. Unevenly ground flats	Clean catch before grinding flats
Humidifiers		
Throwing too much water	Water gets in clothing, wires break out, cotton beds into foundation of clothing	Keep humidifiers clean and in good condition
Lap Guides		
Guides set too close	Worn end on lickerin. Neppy carding at sides of web	Adjust guides so lap ends will not double too much
Lap Rolls		
Smooth rolls	Lap slips, results in uneven sliver	Flute rolls
Lickerin		
Broken, worn, or dull wire	Neppy and cloudy card webs	Systematic sharpening of wire; keep heavy pieces from going through
Tight belt	Bunches and pieces of metal go through	Adjust belt slack so that if a thick place tries to go through, the belt will slip off

Condition	Result	Remedy
Lickerin (Continued)		
Broken pulley	Broken flange will cause accidents	Replace pulley
Choked oil grooves in lickerin shrouds	Oil runs onto screens and cylinder wire; causes bad selvages, dirty and oily work; the wire loosens in foundation	Keep oil grooves free of leaf and sand
Line and Level		
Cards out of line	Wire becomes faced and it takes more power to run cards	Check line and level
Screens		
Choked screens, bent or broken	Poor cleaning, excessive fly under cards and bunches in sliver	Inspect screens and correct conditions when cards are ground
Stripping Rolls		
Poorly covered rolls	Cards not stripped properly; neppy carding	Inspect often and keep in good condition
Trumpets		
Trumpet hole too large	Uneven and poorly condensed sliver; bunches pass through	Use standard-sized trumpet for sliver

Sharpening Lickerin Wire

Lickerin wire can be sharpened with a straight-wire burnishing brush operated from a 5-in. band pulley driven from the card cylinder. To make a cradle for the brush, make bearings from two blocks of wood 8 ins. long, 3 ins. high, and 2 ins. thick. Remove the feed roll, feed plate, and lickerin cover. Bolt the blocks into the feed-plate bolt holes on the side of the card. The blocks can be cut in half so they can be removed when not in use.

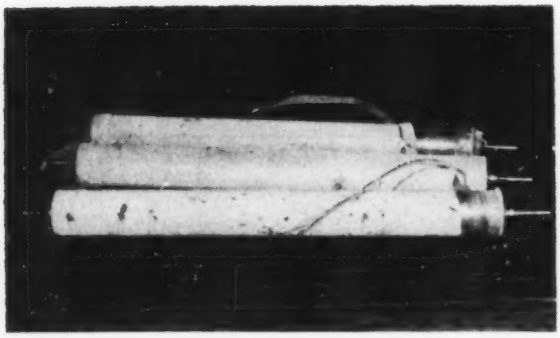
Drill holes in the blocks for the burnishing-brush shaft, and make sure the brush is true with the barrel of the lickerin. The wire of the lickerin should just clear the barrel of the lickerin.

Run the lickerin in the regular way, and run the brush from the cylinder.

Oiling Schedule for Cards

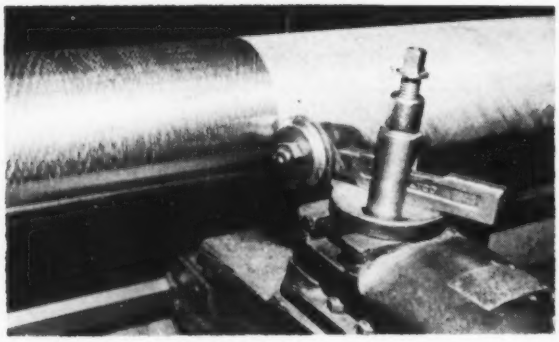
Cylinder	Daily	**Worm gears (grease)***	Weekly
Doffer	Daily	**Comb boxes**	Twice weekly
Lickerin	Daily	**Calender rolls**	Twice weekly
Loose pulley	Daily	**Flat pulleys**	Twice weekly
Doffer pulley	Daily	**Coilers**	Twice weekly
Worm gear	Daily	**Cylinder and lickerin bearings (grease)***	Monthly
Stud	Daily		
Idler-band pulley	Daily		

*This grease is put in the bearings to prevent the oil from flowing too freely through the bearings. After new grease has been put in, a small hole about 1/8 in. should be made through the grease so the oil can reach the bearings.

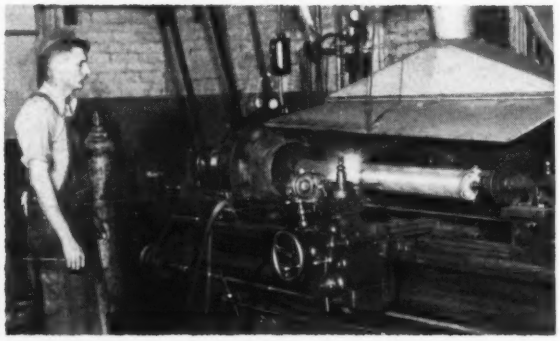


STEP 1—Old take-up-roll fillet that is worn, rusty, torn, or loose is removed.

STEP 2—The uncovered roll is cleaned and polished with emery cloth.



STEP 4—One coat of carbon wire and one of stainless steel are applied to the roll.



STEP 3—The roll is knurled to roughen the surface so that molten metal will bond.

LOOM TAKE-UP ROLLS
Metallized for $2.99 Each

▶ Over 95% of the take-up rolls of the 2,589 looms in one cotton mill have been metallized, and only two rolls have been removed for defects

▶ Cost: 7¢ per inch of roll length

By RICHARD B. PRESSLEY
Associate Editor, TEXTILE WORLD

TAKE-UP ROLLS for looms are being metallized at the Dwight Div. of Cone Mills Corp. at Alabama City, Ala., at an average cost of $2.99 per roll on 40-in. looms. The average cost per linear inch of rolls for several widths of looms is 7¢. (Rolls are 3 ins. longer than the width of the looms.)

An average of 1 lb. of carbon wire and 1 lb. of stainless steel are used to metallize each roll. The cost of these materials when Dwight bought its present supply last year was: carbon wire in 500-lb. lots, 35¢ per lb.; stainless steel, 76¢ per lb.

Total costs for metallizing a roll for a 40-in. loom are:

Labor	$1.22
Material	1.12
Gas	0.65
Total	$2.99

Only Two Bad Rolls So Far

All take-up rolls removed from the looms to be re-covered for the last seven years have been metallized, and now over 95% of the rolls of the 2,589 looms in the plant are metallized. During the seven-year period, only two metallized rolls have been removed because they were defective. In both cases, a single pass of stainless steel was added and the rolls put back in production.

Rolls covered with tin fillet are removed from the looms because the fillet is loose or rusty or because they are making cloth defects such as holes, temples not holding, cloth slipping and beating back, etc. The rolls are held in the machine shop until several are collected, so that they can all be rebuilt at once while the lathes are set up for the work.

The gears are removed from the rolls before they are sent to the machine shop; and when the rolls reach the shop, a shop man breaks the end of the tin fillet with a screwdriver and pulls off the fillet while the take-up

CONTINUED ON PAGE 168

How To Treat DESIZING WASTE For Sewage Disposal

- **There are two sources of desizing waste: the enzyme solution and the washer rinse water**
- **The enzyme solution is the real troublemaker, but its volume is small compared with the rinse water; therefore, both wastes are of equal concern**
- **The two wastes mixed can be effectively treated with adapted microorganisms under aeration**

By NELSON L. NEMEROW, N. C. State College

DESIZING WASTE from cotton-goods finishing plants can be treated with adapted microorganisms to meet sewage-disposal requirements.

Most desizing before bleaching is done with enzyme solutions. The gray goods are wet out in the enzyme solution for a minimum of 1½ hrs., and the waste enzyme solution is discharged daily. This solution is the first source of waste in desizing.

The second source of desizing waste is washing, where the converted starch is rinsed off. Overflow rinse waters, which are mostly reduced starch or sugar, are large in volume but low in pollution qualities.

For every 100 lbs. of cotton fabric finished, there are 720 gals. of starch rinse-water waste and 2.5 gals. of waste enzyme solution; but the enzyme waste is five times as pollutional as the starch waste.

Both wastes are highly dissolved and mostly organic. The enzyme waste is dark brown and almost neutral or slightly alkaline. The starch waste is milky and also neutral. Both wastes have a ratio of dissolved organic matter to B.O.D. (Biochemical Oxygen Demand) of slightly greater than 1 to 1.

The dissolved organic matter can be easily broken down by bacterial oxidation in five days, whereas most domestic sewage is much more difficult to decompose completely.

How the Waste Is Treated

Two experimental runs showed that the B.O.D. of enzyme waste was reduced 37% (from 4,400 parts per million to 2,800 ppm.) after it was mixed with adapted seed and aerated for 24 hrs. After 48 hrs. of aeration, the B.O.D. was reduced 55% (to 2,000 ppm.); after 72 hrs., 70% (to 1,400 ppm.); after 144 hrs., 90% (to 500 ppm.); and after 168 hrs., 95% (to 200 ppm.).

Almost any degree of B.O.D. reduction can be obtained by controlling the aeration time.

Unseeded control samples showed slight and erratic B.O.D. reductions during the first 72 hrs., and the reduction increased steadily (an indication of oxidation). Over-all reductions in B.O.D. were never as high in the unseeded samples as in the seeded ones.

Part of the reduction in seeded samples was caused by dilution with the seed liquor. Similar oxidation results were observed some time ago with cotton-kier wastes. It is quite possible that some type of auto-oxidation occurs without deliberate seeding after some time.

A third experiment was run on a mixture of 288 parts (by volume) of starch rinse waste to 1 part of enzyme waste. Adapted seed matter reduced B.O.D. from 925 ppm. to 300 ppm. (67%) in 24 hrs. Supernatant material from settled waste from this run was used to seed a fresh sample of waste mixture and produced a similar reduction in B.O.D. After 72 hrs. of aeration, B.O.D. was 85 ppm. (90% reduction); and after seven days it was 40 ppm. (95% reduction).

Again, almost any desired B.O.D. reduction is attainable by controlling aeration time.

A basin designed to hold and aerate a 24-hr. volume of waste would produce partial treatment, or 67% reduction. A three-day basin would produce complete treatment, or about 90% reduction in B.O.D.

This third run, on the mixture, was typical of finishing-plant waste. The results are encouraging because the degree of oxidation is considerably higher than on the enzyme waste alone.

Humanics — **A TW Brief**

Taking Up for Workers

A cleaning woman was recently fired for using strong language in the company's cafeteria during her lunch period. Because she was fired, she was ineligible for unemployment compensation. However, her claim for compensation was allowed by the examiner on the grounds that she was behaving according to standards acceptable to her fellow workers and that her language was not offensive to them.

The woman was not fired because she broke a company policy; she was fired because her behavior, which was acceptable to her fellow workers, was disapproved of by somebody who had a different set of standards.

What effect the firing had on the other cleaning women didn't come up, but their morale was certainly not increased. Behavior expected of workers by management must be based on behavior that is common to their fellow workers and not behavior that somebody in the front office would like to see practiced.

The departmental supervisor has the responsibility to take up for his workers when he thinks their behavior is being misunderstood by somebody up the line.

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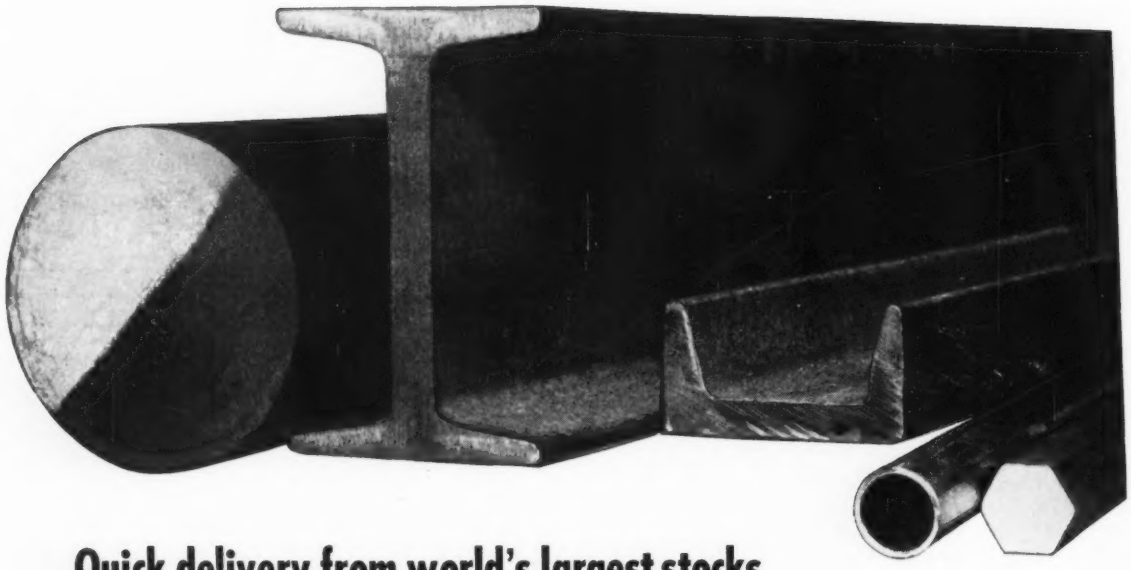

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Quick Checks for COTTON-YARN APPEARANCE

▶ Nearly all mill men have a few quick, simple tests for indicating whether or not quality is satisfactory. While these checks do not replace laboratory tests for the record, they are useful trouble spotters that help production men run their jobs.

▶ Here are a few quickies for yarn appearance that we've bumped into in mills.

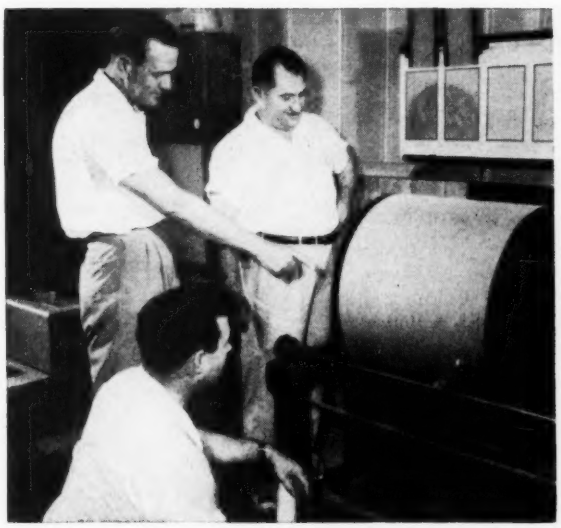
BLACK AND WHITE BOARDS

Standard USDA yarn-appearance blackboards emphasize neps and unevenness but tend to blank out trash.

Harry Brasseur, managing director of Cotonniere Nouvelle Orleans, Ghent, Belgium, wanted a better picture of the appearance of his cotton yarn; so he started using both a black and a white board.

They are of the same size and are wound with yarn in the same way. The black board shows neps and evenness, and the white board shows trash. USDA standards of comparison are used for the black boards; and the mill set up its own A, B, C, and D standards for the white boards.

In addition to yarn-board comparisons, the mill knits samples and compares them with the A, B, C, D standards on the black and white boards.



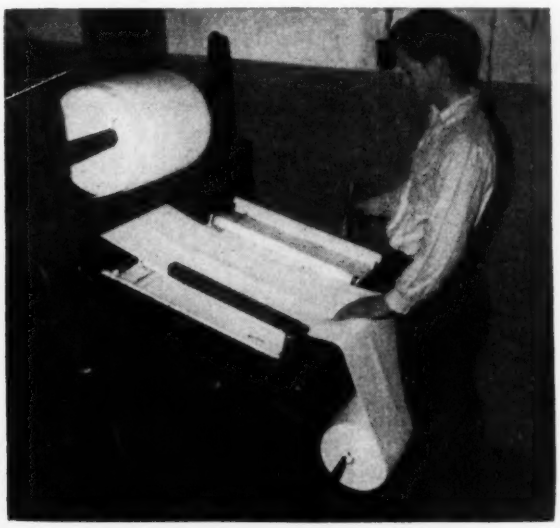
A FAIR-SIZE CYLINDER, covered with black velvet or felt, is used at A. M. Smyre Mfg. Co., Ranlo, N. C., for examining much longer continuous lengths of yarn than can be wound on a standard yarn-appearance board.

During winding, the cylinder is driven by a motor and a yarn guide traverses a grooved bar mounted on the frame in front of the cylinder.

Big Board May Be Used

A variation of this method is to use a big blackboard similar, except in size, to the standard yarn-appearance board. One mill uses such a board that measures something like 2x3 ft. Yarn is wound on by hand with the same sort of reel used to wind yarn on standard blackboards.

Facilities for either of these methods are easily made in a mill's machine shop.

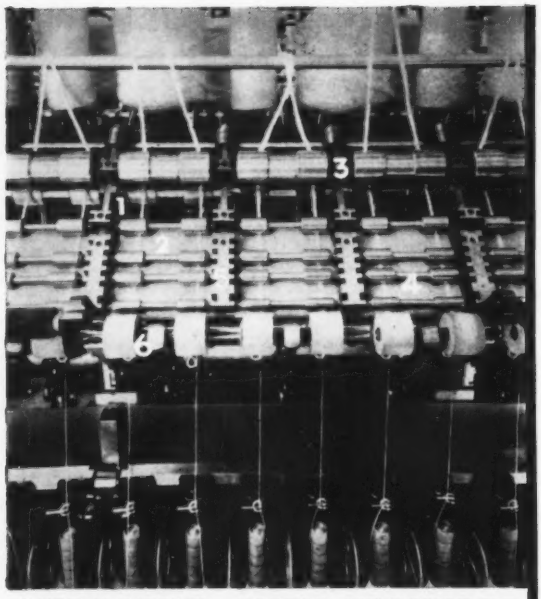


KNITTED-FABRIC appearance is a good check for both knitting mills and yarn mills that make knitting yarns.

The setup shown here is used at Roanoke Mills, Roanoke, Va., for knitted fabric. It consists of an inspecting frame that has a pair of let-off rolls, a pair of take-up rolls, a motor and start-and-stop lever, and a white inspecting board lighted with fluorescent lights over which the cloth runs.

Lighted Tube Also Used

A variation of this method, used by a yarn mill in Tennessee, is to use a frosted glass tube 5 or 6 ins. in diameter and 2 or 3 ft. long, lighted by a fluorescent tube over which the inspecting tube is mounted. A tubular fabric knitted on a 4-in. circular machine is slipped over the frosted tube, the fluorescent light turned on, and the tube rotated to expose the fabric all around the tube.



NEW S.A.C.M. SPINNING FRAME SPINS *ALL* TYPES OF WORSTEDS, BLENDS AND SYNTHETICS

This new S.A.C.M. Spinning Frame produces fine quality yarns from twisted or untwisted Rovings. The new S.A.C.M. wide apron Drafting System controls a wide range of various types and lengths of fibres, with drafts up to 20. Tachometers give a constant check on the front roller and spindle speeds. Precision machine work and simplified construction keeps maintenance low. This versatile frame, combining high quality spinning with high production, is an attractive investment for the spinner of quality yarns. May we send you more information?

VERSATILE, NEW FEATURES

1. Three unit construction permits changing aprons in a few seconds without stopping the machine. **2.** Completely open view of drafting element. **3.** Ratch adjustment up to 11 13/16". **4.** One apron for two spindles keeps area cleaner. **5.** Multiple slots allow quick adjustment of top carrier roll settings. **6.** New patented spring weighting system gives accurate and adjustable control of front top roll pressure.

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Personalized Fixing Keynotes Joanna's MACHINERY MAINTENANCE

- **Every fixer knows which machines are his own responsibility at Joanna, and checklists help him to remember all important details**
- **Joanna repairs any parts that can be fixed for less than new ones cost, and special machine-shop tricks make repairing increasingly profitable**
- **This article covers cotton machinery from opening through weaving**

By JOE L. DELANY, General Superintendent, Joanna Cotton Mills Co.

OPENING

Maintenance in this department is divided into three parts, and each shift takes one-third of the load. Machines are split equally among the fixers, and each fixer has the definite responsibility of maintaining certain machines. Any breakdown is repaired on the shift when it occurs.

In general, the fixer sets spike rolls, tightens aprons, cleans belts, applies belt dressing, and lubricates according to machinery manufacturers' schedules. Lubrication schedules of each machine are posted in the room, and each fixer has a manufacturer's booklet giving full details of the individual machine. This booklet not only familiarizes him with the working details of the machine but also gives him the maker's suggestions for proper upkeep.

We do not have very many machines in our opening line, and with three shifts we can check each machine once a week. Each of our opening lines is equipped with a Cen-Tennial opener. Once a week we shut down. After due safety precautions, a man with a flashlight gets into the hopper. A second man then manually turns the main drive very slowly to give the man inside a chance to check the condition of the gin saws and also pick their teeth. Particles of wood and other foreign matter quite often become imbedded in the sharp saw teeth and, if not removed, eventually impair opening efficiency.

Many bearings in our opening line do not have grease fittings and must be taken apart and repacked; but since we do this job only two or three times annually, we think that it entails no great extra work. We also think that it prevents overlubrication, which tends to break down grease seals and allow grease to run out and mess up the machine, wastes time and material, and makes an eyesore.

Based on a talk given to the Northern North Carolina-Virginia section, Southern Textile Assn.

PICKING

We overhaul each of our 10 pickers every three months. Each picker is completely dismantled. All bearings and journals are gone over for possible wear and, after being cleaned with a water-type cleaning solution, are lubricated and reset. Leathers on condenser screens are replaced: three months is their life. Beaters and fans are taken out and balanced to insure longer life and riveted where necessary. Any dents found are carefully removed. In short, we try to do the very best job possible.

Our overseer has worked out a checklist system of day-to-day checking of the pickers, and we all feel that this has proved successful. Briefly, the machines are divided into three groups, and each fixer is given an equal amount of work. The checklist is as follows (one picker per man per shift):

Check evener belt and shipper fingers, grease shipper bearings, clean and grease control bearings in blending reserve, clean and grease evener-roll bearings, check and adjust calender-roll weights, adjust calender racks, clean and check evener linkage, check safety knock-offs, polish calender cheeks.

The above check is done weekly for each picker. In addition, every shift the fixer checks ten laps for weight and cleans and checks all belts. The fixer checks off each item and signs the card when it is completed. The card is picked up daily by the assistant overseer, who inspects the work by the fixer. The card is then turned in to the overseer, who places it in his file and makes spot checks at frequent intervals.

Direct allocation of the responsibility of an individual machine is the best assurance of proper maintenance.

We even stencil the name of the fixer on the picker front to develop personal interest. This works well, as no fixer will want his machine to be second to anyone else's. We have always tried to build a feeling of love and affection on the part of the maintenance crew, and by "personalizing" the picker, we seem to have come close to this goal.

Why Picking Is Important

Joanna is run from the picker room as far as quality control, yarn variation, and uniformity of product are concerned. No pains are spared to make the best lap within our power. Each week we check two consecutive laps from each picker. One is checked on the Saco-Lowell lap tester and the second on the ITT electronic lap tester.

At first we were content to find our yard-to-yard weights were holding within ±4/5 oz. These figures showed a nice high percentage within limits, and we were quite proud. But it was pointed out to us that while this looked good, it was not just what we wanted.

What we really want is to have every lap average within the same tolerance. In other words, if we draw a center line down the middle of our standard lap weight per yard and set up tolerances of 4/5 oz. on either side, every one of our 10 pickers should fall within those limits.

This is our goal; we have not hit it yet, but we know what we want and have greatly improved. All our picker maintenance is directed toward keeping our yard-to-yard variation as low as possible.

[For a complete story on Joanna's picker maintenance, see TW, July, '54, p. 86.]

CARDING

Our fillet cards are ground every 240 hrs. All are equipped with continuous strippers, and our grinders grind four cards in 8 hrs. The cards are given a light grinding and a close setting. Fillet life is short; some has actually been worn almost to the knee in less than six years.

But some of this short life is caused

Specify MINEROL

For Controlled Flexibility

There Is No Substitute for Quality

BORNE SCRYMSER Since 1874

Our Laboratory Facilities are always at your disposal

IN THE opening, picking, carding, and spinning operations — maximum efficiency demands flexibility of fibres — both natural and synthetic. And that is the very function MINEROL performs so satisfactorily.

MINEROL not only fits in with modern methods of humidification used by the Textile Industry but actually augments and transcends them. For MINEROL stabilizes processing conditions two ways — (1) by retaining moisture and (2) by lubricating fibres.

As a result, scores of case histories prove that MINEROL not only cuts costs and eliminates waste in time and material, but actually pays for itself in increased production. Better Employee Relations result from reduction in card waste and "fly".

If you would like complete information on MINEROL,—let us know the type, grade, and staple of the fibres you use, whether the fibres are to be carded or combed, and what type of opening or picking equipment you employ. With this information in hand — we'll do the rest.

BORNE, SCRYMSER COMPANY ELIZABETH, N. J. • CHARLOTTE, N. C.

by failing to grind the bare surface of the doffer and the cylinder at the time the clothing is put on. One card, which the grinder claimed had given him considerable trouble in trying to set uniformly across the width, took four days of bare-surface grinding before we ground out all the hills and valleys left there by the manufacturer.

We feel that the life of the clothing is greatly extended if it is set on a uniform surface. Later, after this card had been reclothed, the grinder said that it was easy to set, made a good web with few neps, took very little grinding, and was easy to control for waste.

We have recently completed overhauling feed rolls in our own shop. Each roll, with bushings, was sent to the shop, where it was built up with our welding machine. (We now have a metallizing unit and will use it in place of the welding torch.) The journal was then turned to size. The bushings were reamed out and oilless sleeves inserted. The oilless sleeve was made in two parts of such length that there was a ¼-in. gap between the two, right under the oil hole, when they were pressed into the steel bushing. This gap acted as an oil reservoir, and we haven't lost one in the two or more years since the work was done. We did the same thing to coiler-head calender-roll bearings.

Changing to Metallic Clothing

We have begun the change-over to metallic card clothing and have found that there is one thing we must do on practically every card we reclothe —take out the doffer shaft along with the bearings and rework the surfaces of each. We usually find the cast-iron shaft and the cast-iron bearings in which it runs very badly worn.

We think this wear is caused by running the doffer at about 275 rpm. while grinding. Cast iron to cast iron simply doesn't stand this speed, and few people look for any wear on a doffer that ordinarily runs at about 10 rpm. One of the first sets of metallic card clothing we put on was seriously damaged by not checking this point.

Now we regularly measure wear on the journal and bearing with a micrometer. These units are expensive: the journal because of its weight and size, the bearings because the upper half is also the cheek enclosing the top half of the doffer. Together they represent a total new cost of almost $150,000. Thanks to our skilled shop men, we rework all three units for about one-tenth of this amount.

It is a major job to install metallic card clothing on a cotton card, and we have developed a team of two men who take five days per card. There is a great deal of grinding on the base wire before the surface wire can be wound on. So our mechanics are usually busy on two other cards getting them ready or finishing them up. It's almost like the old-fashioned WPA—one coming, one working, and one going.

There is very little maintenance on a metallic-wire card. If trouble is encountered and a section is flattened out, it cannot be raised as you would do with a regular fillet wire. It must be cut out and a new section wound on in a very neat way devised by the manufacturers. It is still quite a job, but not beyond the means of a well-trained card grinder. There is some grinding of metallic wire, but only enough to level off the wire for extremely close, accurate settings. On a fillet card you have to acquire a sort of feel for the proper settings. On the metallic job it is practically "go or no go."

DRAWING

Our drawing frames are completely overhauled once a year. Rolls are cleaned every two weeks, but bottom steel rolls are taken out only at the annual overhaul. Our assistant overseers check the web of every drawing delivery at least once a shift.

At one time, the type of roll in use was fearfully hard on top-roll cots, and we had to rebuff almost twice a month. New steel rolls have been installed, and so far we have had extremely little replacement (then usually from a choke-up and not from wear).

We have the lap-back type of drawing and have worked out a fixer checksheet for the sliver lapper but not for the five-roll drawing. It is quite easy to split our nine lappers into three for each fixer, who checks them according to the checksheet. Each fixer checks and bleeds the pneumatic cylinders on each of his three units. Then, weekly, he checks these points on each lapper: feed-table, calender rolls, tension on drive chains, lubrication of drive chains, gearing, spool-clamping device, loose gears and worn keys, grease fittings in place, oil bowl on let-off full, electric stop-motion operating.

Each man is here again responsible for individual machines and really goes all out to be certain that his machine is in extra-good working order. All our lappers are equipped with the new type of pneumatic back release, and I am glad to say that this functions painlessly and that all our operatives heartily approve it.

Our standards department daily checks 20 deliveries of drawing, and any found out of line are immediately called to the overseer's attention and given fast action toward improvement. We weigh the same 20 deliveries for size, and we plot on a graph the average grains per yard of each four delivery heads. When a head is spotted running continuously heavy or light, we change one tooth on the crown gear to pull it closer to standard. This procedure has helped greatly in reducing our coefficient of variation.

ROVING

All frames have rolls pulled, gear shafts and bearings cleaned, and the frames lined and leveled once a year. The rest of the overhauling is done by section men as preventive maintenance. Top rolls are buffed annually. One overhauler and two helpers do all card-room overhauling from pickers through roving. Major overhauling is done during the summer, when plenty of energetic young people are on hand during school vacation.

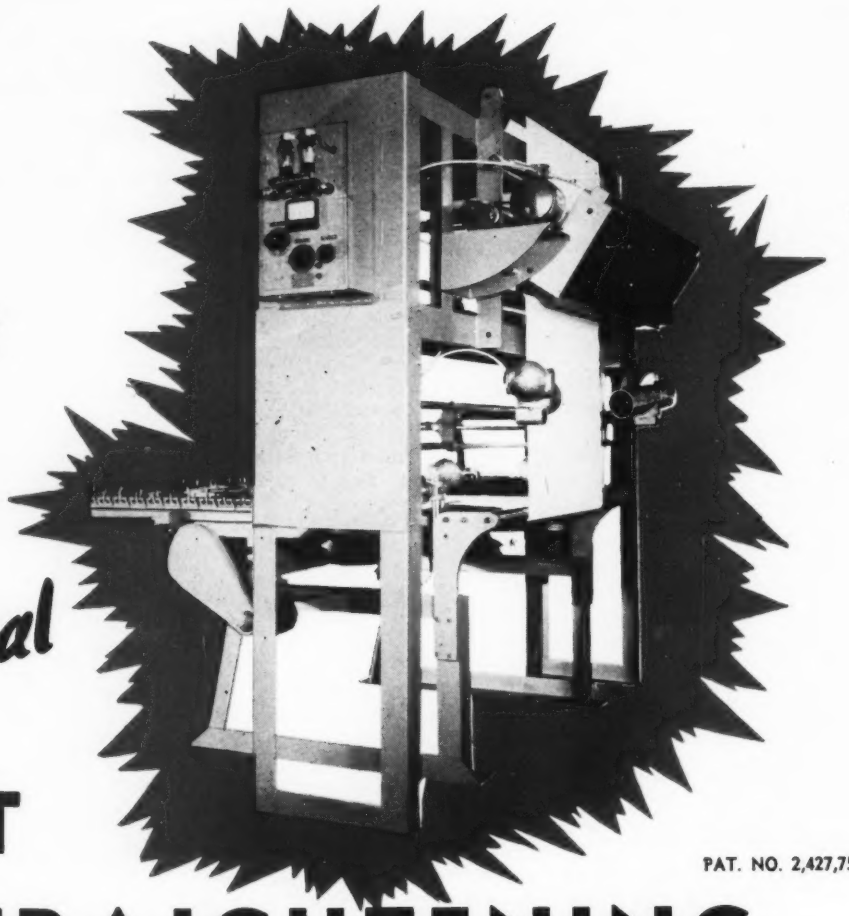
It is not my purpose to bore you with a detailed description of how we go over each particular part of the frame; we do this just about the way you do. In addition, we go over each one of our flyers and check for balance, gauge of slot, roughness of nose, hollow arm, and over-all polish. Pressures are checked for over-all conditions, repaired if only slightly worn, and discarded if excessively worn. There are no tricks in keeping a frame in good order—just plenty of plain, solid work day to day, fortified by a good annual overhaul.

Our quality-control people keep a sharp eye on the roving and try to point out the frames that have the most deviation from standard. It is really surprising how little size variation exists in any one frame but how much variation occurs over the entire job. This is what the quality-control boys are after, and it is amazing how much good they accomplish.

Our shop has set up methods for rebuilding the bearing surfaces of the cone shafts by metallizing, a terrific timesaver. Our old method was to pull the cone from the shaft and weld extra metal on it. We had to take extreme pains to prevent heating distortion from the weld, which meant extra work in straightening. Then the shaft could be turned and pressed back into the cone, a 4-hr. job. Now we spray-bond the shaft with the cone still on. Not enough heat is applied to distort anything, and it is then ready for the lathe. The entire job takes no more than 45 mins., and the shop takes pride in doing it instead of dreading it.

CONTINUED ON PAGE 213

The Finest in Practical WEFT STRAIGHTENING



PAT. NO. 2,427,753

Winsor & Jerauld, specialists in tentering equipment and pioneers in the development of efficient and practical cloth control, offer as a "package" device a weft straightener unit proven by leading finishing plants in its adaptability and reliability.

Practically all weaves can be handled, either of low or high count, in which the filling or weft threads give a measurable amount of reflected light.

Photo-electronic "eyes" receive a signal originating from the reflection of a battery of lights directed at the cloth.

The intensity varies in a manner comparable to the amount of degree of bias to be corrected, causing a group of tiltable rolls motivated by electro-mechanical methods to produce a change in the relative length of the two selvages.

Unit assembly is normally applied at the entering end of the tentering machine and may be adapted as required to conform to space restrictions.

We have more satisfactory installations than all other similar types combined.

Additional information for specific applications will be gladly forwarded upon request.

Experts in Cloth Finishing Machinery

Winsor & Jerauld
MANUFACTURING COMPANY, INC.

How To Keep a Complaint From Becoming a Grievance

Pointers FOR SUPERVISORS

► **Complaints are a normal part of the job. But you have to take the right action at the right time to avoid the trouble that comes when a complaint grows into something worse.**

By MARION J. WISE, JR.

WHAT IS A GRIEVANCE?

If you are a supervisor in a mill with a union contract, you will probably say that it's a complaint that can be carried to arbitration. That's the special meaning the word has for you.

But any supervisor who understands people will probably add that a grievance is any complaint that got out of hand. Whether your employees can take you to arbitration or not, they can and do nurse grievances. And an aggrieved worker is an angry, resentful person who can spread dissatisfaction throughout your department.

What makes the difference between a complaining worker, who may be only mildly irritated, and an aggrieved worker, who is so mad, so full of a sense of mistreatment, that he wants to get even with you? Where is the critical point where a complaint turns into a grievance? Where does the trouble lie?

Part of the answer is in the individual workers. Some people are naturally prone to grievances. They were born protesting and they never stopped, and nothing you or anyone else can do will ever please them.

But most of the answer is in you. Your own actions—or failure to act—do more than anything else to determine whether a complaint turns into a grievance.

What You Should Do About Complaints

First of all, face the fact that you will get complaints from your employees. Wherever people work together, there will be a certain amount of squabbling among them. Even if you're a good supervisor and working conditions in your mill are pleasant, some of your workers will find that their personal interests clash with those of the group.

So don't expect to reach an ideal working state in which everybody is always happy. From time to time you'll be faced with employee complaints. Then it's up to you: you either settle the complaints and keep the peace, or you let unsolved problems remain to cause resentment among your employees and more trouble for you later on.

Listen Carefully, and Then Do Something

By handling a complaint as soon as you learn about it, you keep it from growing in the employee's mind until it assumes an importance out of all proportion to its original cause. Everyone likes to have his troubles listened to; and if you do that promptly, just listening is sometimes enough.

One of the first things a salesman learns is that customer gripes don't always demand action. Frequently the customer is satisfied just to get the gripe off his chest. But when that isn't enough, quick action to remedy the complaint is the best way to keep the customer happy.

The same is true of employee gripes. Listen to them as soon as you are aware of them. But when just listening isn't enough, act. And act fast.

But not too fast. Don't act before you have enough facts to enable you to reach the right decision. Generally, the first side of a complaint you hear sounds very convincing; and you are prone to believe you have all the information you need. But get the other side before you take any action. This procedure is particularly important when a dispute arises between two or more employees.

Don't rush into making the wrong decision. Nothing makes a supervisor lose face faster than to make a hasty decision that has to be reversed if it is carried to someone higher in authority.

But if you find out more facts that make you change your own decision after it has been made, change it yourself and admit you were wrong. It takes a big man to admit a mistake, and workers respect him for it. They don't respect the supervisor who has to have his mind changed for him by someone higher up.

Be Fair and Consistent

When you settle a complaint, be fair. Do the thing that seems just to you. Don't be a personality boy and listen and then say, "Well, now, John, you don't want to worry about a little thing like that. Be a good guy and forget it." The employee doesn't forget it. As soon as he gets out from under the spell of your personality, he realizes you just gave him a lot of sweet talk and that you did nothing at all about his complaint. Then he really has a grievance.

You must always reach some decision and must tell the employee what it is. Even if you decide that you are not going to do anything about his complaint, you must tell him so and tell him why.

It's hard to do, but try to be uniform in your hearing and treatment of complaints. Don't have hard days and soft days. Don't be sympathetic to some employees and brusque with others. It's human nature to have moods and to like some people better than others, but these factors must not interfere with your judgment and actions. Supervisors, like everyone else, have good days and bad days, easy days and troublesome ones; but you must try to present a uniform appearance to your employees.

You Won't Always Be Popular

Don't fool yourself that you can always please a complaining employee, even when you have handled his complaint properly. Some people wouldn't be satisfied with the moon with a fence around it, and some decisions that are best for the employee group as a whole or for the company are still going to make an individual worker unhappy.

CONTINUED ON PAGE 184

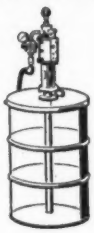
Here's how proper lubrication methods boost production...slash costs...up profits!

Planned Alemite Power Lubrication saves 23.9 man-hours for every 100 pounds of grease used!

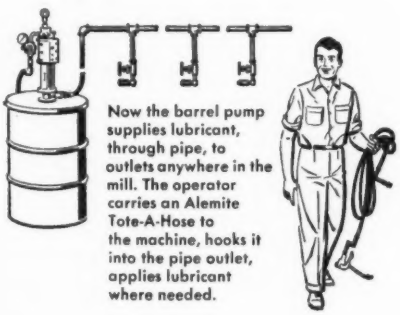
With operating costs what they are today, any saving is important, and Alemite lubrication systems do far more than save man-hours. Savings in *machine-hours*—decreased maintenance costs—increased efficiency make the real value of planned Alemite lubrication almost incalculable!

Alemite Barrel Pumps fit directly into refinery drums, supply the power to send lubricant all over the mill, wherever needed, through pipes to outlets or to overhead hose reels. Or drum and pump can be mounted on a dolly and so go right to the job.

Alemite Barrel Pumps are available to fit both 100 and 400 pound drums, handle all types of lubricants from light oils to heaviest fibrous greases. And with any Alemite Barrel Pump installation you immediately get the big advantage of a sealed system. Lubricant stays "refinery clean." No more mess—no more product spoilage and fire hazard from waste grease or oil.



An Alemite Barrel Pump, either air or electrically powered, is inserted in a fresh drum of lubricant. Lubricant stays sealed, fresh, "refinery clean."



Now the barrel pump supplies lubricant, through pipe, to outlets anywhere in the mill. The operator carries an Alemite Tote-A-Hose to the machine, hooks it into the pipe outlet, applies lubricant where needed.

Where it is not possible to install piping for lubricant, the advantages of power lubrication can be brought right to the machine by simply mounting the drum and pump on a dolly.

Wherever the need for lubrication is frequent, an Alemite Pump and Hose Reel is the answer. Forty-foot hose is out of the way when not in use.

With Alemite Plan "D" Lubricant is "Refinery Clean" Wherever Applied!

These applications of Alemite Barrel Pumps to provide tailored power lubrication are known as Alemite Plan "D." It is one of the five Alemite plans that your trained Alemite representative can show you. Ask him about the colorful, new, informative slide film, "No Margin for Error," which will help you and your men cut production costs. No obligation, of course.

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Free! **New Booklet "5 Plans for Better Plant Lubrication"**

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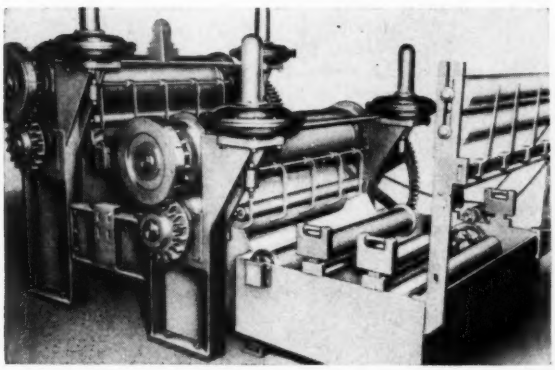
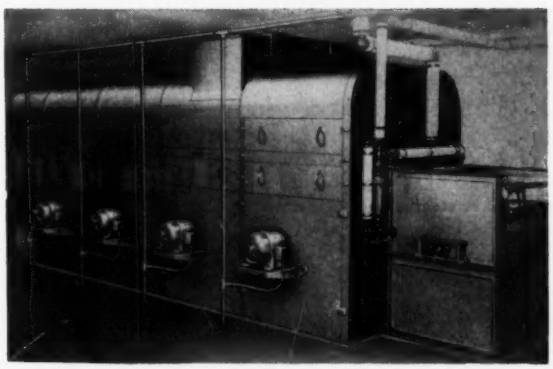
TEXTILE Equipment NEWS

Backwasher and Dryer Handle 700 Lbs. per Hr.



BACKWASHER is built with 66-in. bowls and pneumatic squeeze rolls. Top roll is vulcanized rubber; bottom main roll is chrome-plated steel.



DRYER is built in 6-ft. width with four to seven sections. The system will handle 48 3-oz. ends of worsted card sliver at 15 ft. per min.

The new backwasher and backwash dryer for worsted combing plants developed by C. G. Sargent's Sons Corp., Graniteville, Mass., will handle any fiber or blend up to 700 lbs. per hr. (worsted card sliver)—48 3-oz. ends running 15 ft. per min. at temperatures not above 220° F. A typical installation would include two or three stainless-steel bowls, pneumatic squeeze rolls, and a four-section, single-pass dryer.

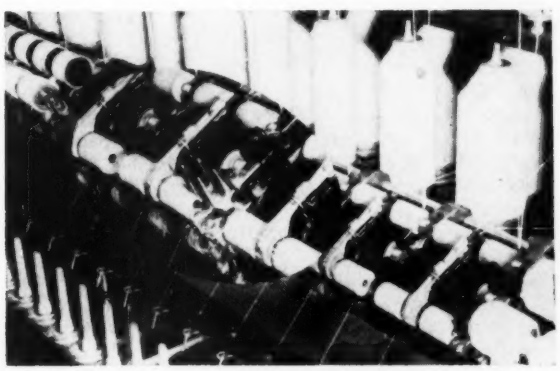
A typical two-bowl system, with standard 66-in. bowls, would have immerser squeeze rolls and a perforated immerser roll in both bowls, with a chrome-plated steel main squeeze roll and a vulcanized-rubber top roll. All rolls run on ball bearings.

The dryer is usually built in four to seven sections in 6-ft. widths. For uniform heat penetration, a simple apron of cadmium-plated steel is used. And to eliminate broken ends, switches on the gill box, dryer conveyor, and backwasher can be synchronized.

The over-all length of a typical installation, including the creel, is 44 ft., 5 ins.

If desired, automatic temperature and humidity controls are available.

Circle T-1 on Reader-Service Card



NEW SADDLE GUIDE can be snapped into place with no changes to standard spinning systems except for discarding the front cap bar.

New Dixon Saddle Guide

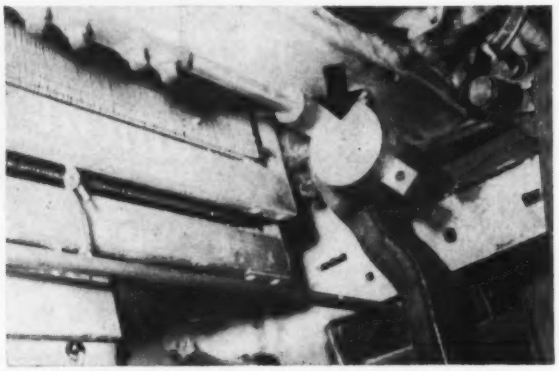
Low cost and high efficiency are features of the new saddle guide, introduced by Dixon Corp., Bristol, R. I., which eliminates oiling and permits piecing up from side to side in the drafting element of any standard spinning frame.

The new saddle-roll combination is recommended for mills not ready to install complete new spinning frames. It is suitable for drafting change-overs and is available for Roth, Duo-Roth, and Casablancas spinning systems.

Installation cost is low. Top rolls and saddles are lifted off, and the new equipment is snapped into place with no other changes or adjustments except for discarding the front cap bar. Existing cap bar guides for middle and back rolls are used. Rulon bearings are standard equipment on middle and back rolls and in the back saddle; and a ball bearing and guide are already in place on the front roll.

Circle T-2 on Reader-Service Card

Device Eliminates Springs on Loom Protector Rods



POSITIVE BINDER CONTROL results when the weight-loaded attachment swings with the movement of the lay to add tension to the protector rod only when it's needed.

A weight-loaded device attached to the protector rods of Draper looms is said to eliminate the need for springs. The manufacturer is Southern Loom Development Co., 2222 Augusta St., Greenville, S. C.

The manufacturer says the attachment gives positive tension control to the protector rod at all times. There are no parts to wear since the body of the device is attached to the protector rod and moves with the protector rod without contacting any loom surface. The weight is attached in any one of four fixed positions on the body of the device, and each position is designed for a different loom speed or fabric construction.

The device fastens over the protector rod and controls the protector rod by the inertia of the loom lay as the lay accelerates and decelerates.

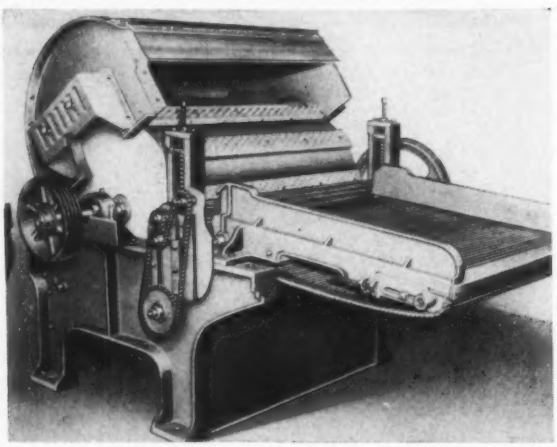
Because the load of the weight is released at the time the loom picks, there is no protector-rod tension on the shuttle boxes when the shuttle leaves the shuttle boxes. But when the shuttle enters the shuttle box, the weight has changed its position, and the binder presses against the incoming shuttle to check it.

The result is that the lug straps and the lug-strap holders can be raised to substantially reduce the picker-stick power. The manufacturer claims that the reduction in picker-stick power removes the strain on shuttles, picker sticks, lug straps, picking shaft and bearings, and gearing of the loom.

To install the attachment, loomfixers uncouple the protector rod at the protector-rod connection, remove the old spring, and fasten the binder-control device on with two setscrews and a capscrew.

Circle T-3 on Reader-Service Card

Wet and Dry Picker for Any Fiber



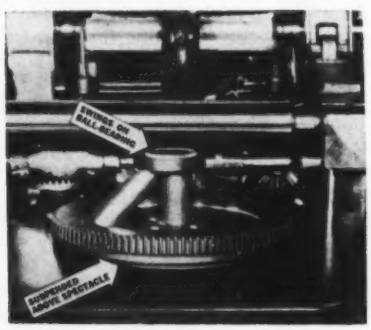
A woolen-type picker is available from C. G. Sargent's Sons Corp., Graniteville, Mass. The machine can be used on synthetics before or after drying, and it can be used to open bleached and dyed cotton fibers before drying in absorbent-cotton plants. Used on blends or pure stock, the picker is designed to give easier carding with less fiber loss and fewer neps. It can be used as a finisher picker in a regular line or as a single process opener.

The picker can be equipped with any combination of single or double rolls, and the rolls can be easily adjustable to the staple length. Rate of feed and delivery are adjustable to the stock. Production depends on the width, and the picker is built in 18- to 72-in. widths. Typical capacities: 18-in. picker, 1,000 lbs. per hr.; 48-in. picker, 2,000 lbs.; 72-in. picker, 3,000 to 4,000 lbs.

WOOLEN-TYPE PICKER handles wet or dry fibers of any kind as a finisher picker in a regular line or as a single-process opener.

Circle T-4 on Reader-Service Card

Fibre Coiler Tube Has Four Features



FIBRE COILER TUBE is suspended above the spectacle and swings on a ball bearing.

Four features of the fibre coiler-tube mechanism developed by Ideal Industries, Bessemer City, N. C., are:

1. Unlimited speed. The fibre mechanism is light and is suspended from the top, and it runs on a permanently sealed and lubricated ball bearing. Because it does not ride on the spectacle, the mechanism prevents drag and permits high speeds.

2. No oil spots on the sliver. The coiler gear does not require oiling; so there is no oil to contaminate stock.

3. No static. Fibre does not generate static, which causes trouble in running synthetics or blends.

4. Standard gear. Within the limitation of the frame gauge, the standard coiler gear can be used for any size can.

Circle T-5 on Reader-Service Card

Correction

In our September issue, page 115, two new opening machines, the Axi-Feed and Axi-Flo, developed by Whitin Machine Works, Whitinsville, Mass., were described. By an unfortunate editorial accident, the identifying captions under the pictures were reversed. We regret the error.

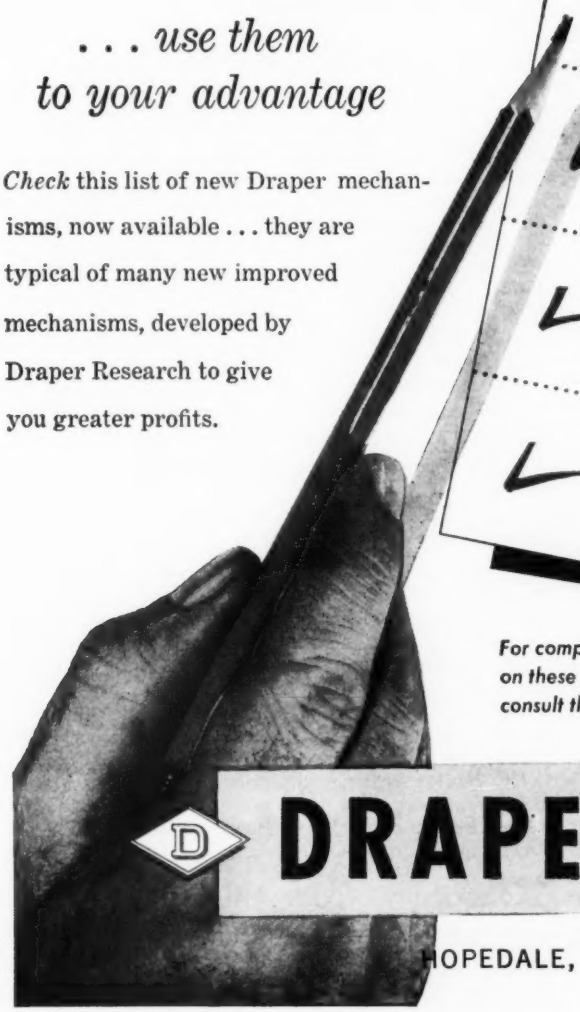
NEW developments On Draper X-2 Looms

- Increase Production
- Increase Efficiency
- Improve Quality
- Lower Costs

. . . use them to your advantage

Check this list of new Draper mechanisms, now available . . . they are typical of many new improved mechanisms, developed by Draper Research to give you greater profits.

- Center Fork Filling Motion
- Ratchet Take-Up
- Anti-Friction Bearings
- New Top Motion and Underneath Parts
- Aluminum Lay
- Draper-Diehl Power Transmitter



For complete information on these and other new Draper developments, consult the Draper Representative in your territory.

DRAPER CORPORATION

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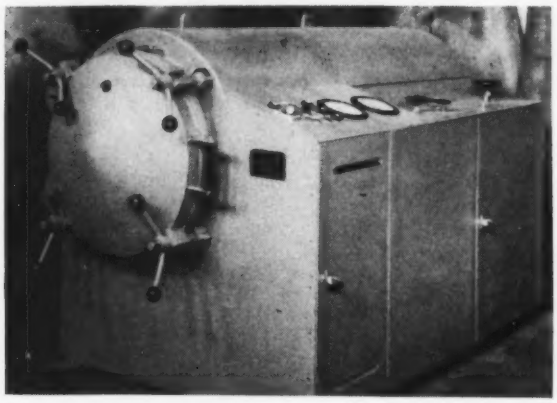
For more information, write direct or use Reader Service post card.

Vacuum-Pressure Steam Setter Handles Yarns and Fabrics



STEAM-SETTING MACHINE handles yarns as well as knitted and woven fabrics made of wool, cotton, rayon, or the newer synthetics. Available from Robert Reiner, Inc., Weekawken, N. J., the Mano steam setter is a vacuum-pressure machine with adjustable steam pressure of 0.1 to 4 atmospheres and corresponding steam temperatures from 112 to 284° F. The interior of the steam boiler is made of rust-resistant and acidproof steel. Holding capacity: 110¼ lbs. with 2¾x5½-in. bobbins; 374 lbs. with 1x5½-in. bobbins.

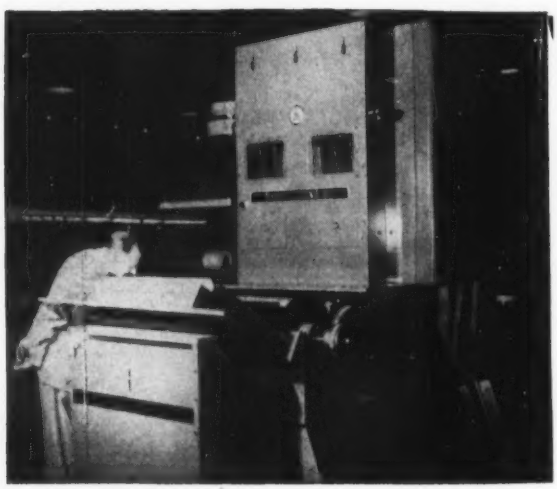
Circle T-6 on Reader-Service Card

40-Ton Multipurpose Calender

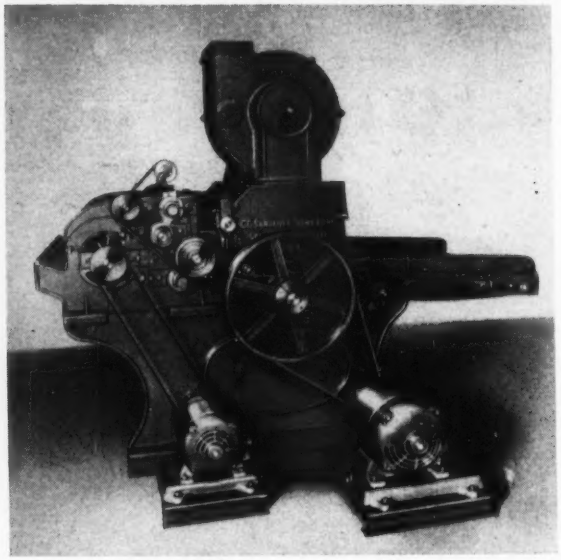
A new embossing, Schreiner, and friction calender with a loading capacity of 40 tons has been announced by McKiernan-Terry Corp., Harrison, N. J. The machine has all the basic features of the heavy-duty 75-ton calender built by McKiernan-Terry. One set of gears, running on correct pitch lines, is provided for the entire range of rolls. This feature insures high-quality work at a low operating cost.

For embossing services, a new design for tipping and inlay applications has been developed; and operating difficulties are reduced to a minimum. Emphasis is placed on accuracy, simplicity, and ease of adjustments. The calender is rugged enough for Schreiner and friction services requiring total pressures up to 40 tons.

Circle T-7 on Reader-Service Card



New Burr Picker Developed by Sargent's



BURR PICKER handles 400 lbs. per hr. of medium-, low-grade, and seedy wools and card waste. Cleaning elements include a main cylinder and two fast-running burr cylinders.

The burr picker developed by C. G. Sargent's Sons Corp., Graniteville, Mass., removes burrs, shines, and other vegetable matter from medium- and low-grade or seedy wools and card waste. All rolls and cylinders are individually adjustable, and all moving parts are mounted on ball bearings.

Waste matter from the main cylinder is thrown off through a bottom rack, and dust and dirt are drawn off by an exhaust fan. The air current is adjustable to the type of stock. The open wool is delivered from the main cylinder to a burr cylinder, where waste material is thrown clear on the upper side of the lap. Then a second burr cylinder strips off the wool to expose the opposite side of the lap to a cleaning action.

Burr cylinders are covered with metallic wire mounted on heavy cast-iron cores. Production is 400 lbs. per hr., with a 15-hp. requirement.

Circle T-8 on Reader-Service Card

No. 16 Cotton Opener

To remove lightweight trash in opening, Saco-Lowell Shops, Boston, Mass., now offers the No. 16 opener—a cleaning unit consisting of a condenser that serves as a feed, a blending reserve, and a beater section. Floor space required is 9x5 ft., and a single 7½-hp. motor drives all the moving parts.

The No. 16 is designed to fit in the opening line after the blending feeder and the new No. 15 opener [TW, March, '54, p. 142].

The carding beater, completely enclosed, runs at 800 to 900 rpm. and has a sturdy pinning arrangement. Neps are said to be prevented by the semicombing action of the No. 16 opener.

NO. 16 OPENER works in conjunction with the No. 15 opener, which is attached to the blending feeder. The No. 16 opener is designed to remove lightweight trash.

Circle T-9 on Reader-Service Card

NEW "LATYL"* Brilliant Blue BG for "DACRON"* builds up well in all shades

Here's Du Pont "LATYL" Brilliant Blue BG—a lively new color with remarkable wet and light fastness for "DACRON" polyester fiber that builds up well in bright, greenish-blue shades, whether applied in aqueous, pressure or Thermosol processes. This "LATYL" dye is compatible with all members of its family.

"LATYL" Brilliant Blue BG is excellent for dyeing materials made entirely of "DACRON" and blends of "DACRON" with other fibers. It also shows great promise for dyeing acetate—in pale shades, for example, this "LATYL" color gives outstanding fastness to light and atmospheric fading.

Du Pont's technical staff will be glad to furnish you with further information about this superior "LATYL" dye, or to help you with any of your coloring problems. To get this assistance, write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Del.

**Reg. U.S. Pat. Off.*

Du Pont Dyes

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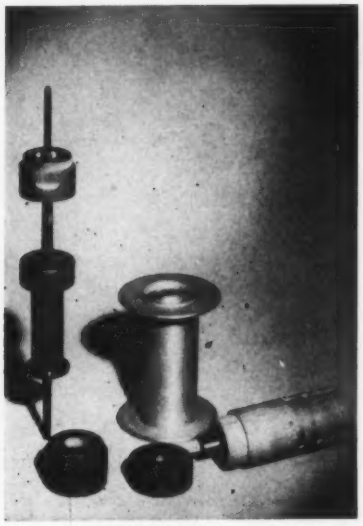
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Three New Bobbins

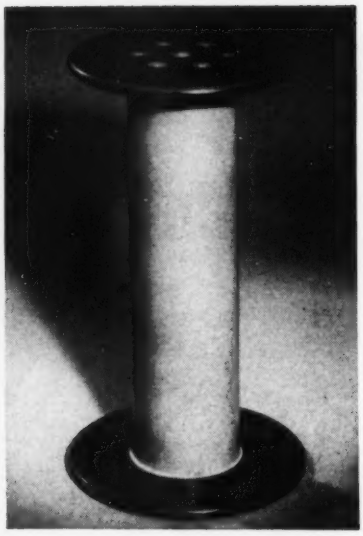


CONVERTIBLE BOBBIN becomes a supply bobbin with the use of the spindle adapter (left) and becomes a take-up bobbin with the use of the mandrel (right). A redrawing operation in Helanca processing is eliminated.

Circle T-10 on Reader-Service Card

BOBBIN FOR HELANCA is made of aluminum to withstand the high temperatures (up to 415° F.) used to twist set Helanca and other new yarns. Called Hi-Temp, the bobbin will also withstand high tensions.

Circle T-11 on Reader-Service Card



ALL-BAKELITE BOBBIN is a spinner or twister bobbin designed to run at high speeds and to stay in balance. The Cloverleaf-Freeland bobbin is held together by tie rods that run the full length of the bobbin.

Circle T-12 on Reader-Service Card

A combination supply and take-up bobbin has been developed by Cloverleaf-Freeland Corp., Hazelton, Pa. With the dual-purpose bobbin, a redrawing operation in throwing Helanca is eliminated. After the conditioning process, the take-up bobbin becomes a supply bobbin with the use of a spindle adapter. Similarly, a take-up mandrel converts the bobbin to a take-up bobbin.

When used as a supply bobbin, the bobbin is driven from the top. Flats in the top end of the spindle adapter engage lugs on the inside top end of the bobbin. This drive gives a smooth-running bobbin.

The hollow shell plus an adapter costs about the same as a regular bobbin; but since several bobbins per spindle are used in throwing, the additional bobbins are cheaper.

Two other new bobbins, an aluminum bobbin for throwing Helanca and a Bakelite twister bobbin, are also available from Cloverleaf-Freeland. These bobbins are described above in the captions.

Wool Openers Have Two or Four Cylinders

The wool openers made by C. G. Sargent's Sons Corp., Graniteville, Mass., are available in four-cylinder or double-cylinder machines. The four-cylinder opener is recommended for heavier, more matted fibers. Operation of both models is similar.

A suggested installation of the four-cylinder opener places the opener at the feed end of the scouring train. It would operate from a pit feed and would be installed on a subbase over a drag conveyor for continuous cleaning. A water chute would carry stock directly from the opener to the washer.

The openers are built in 36-, 48-, 60-, and 72-in. widths. Capacity is 2,000 to 5,000 lbs. per hr. (A 48-in. four-cylinder opener will handle 3,000 lbs. of heavy grease wool per hour.)

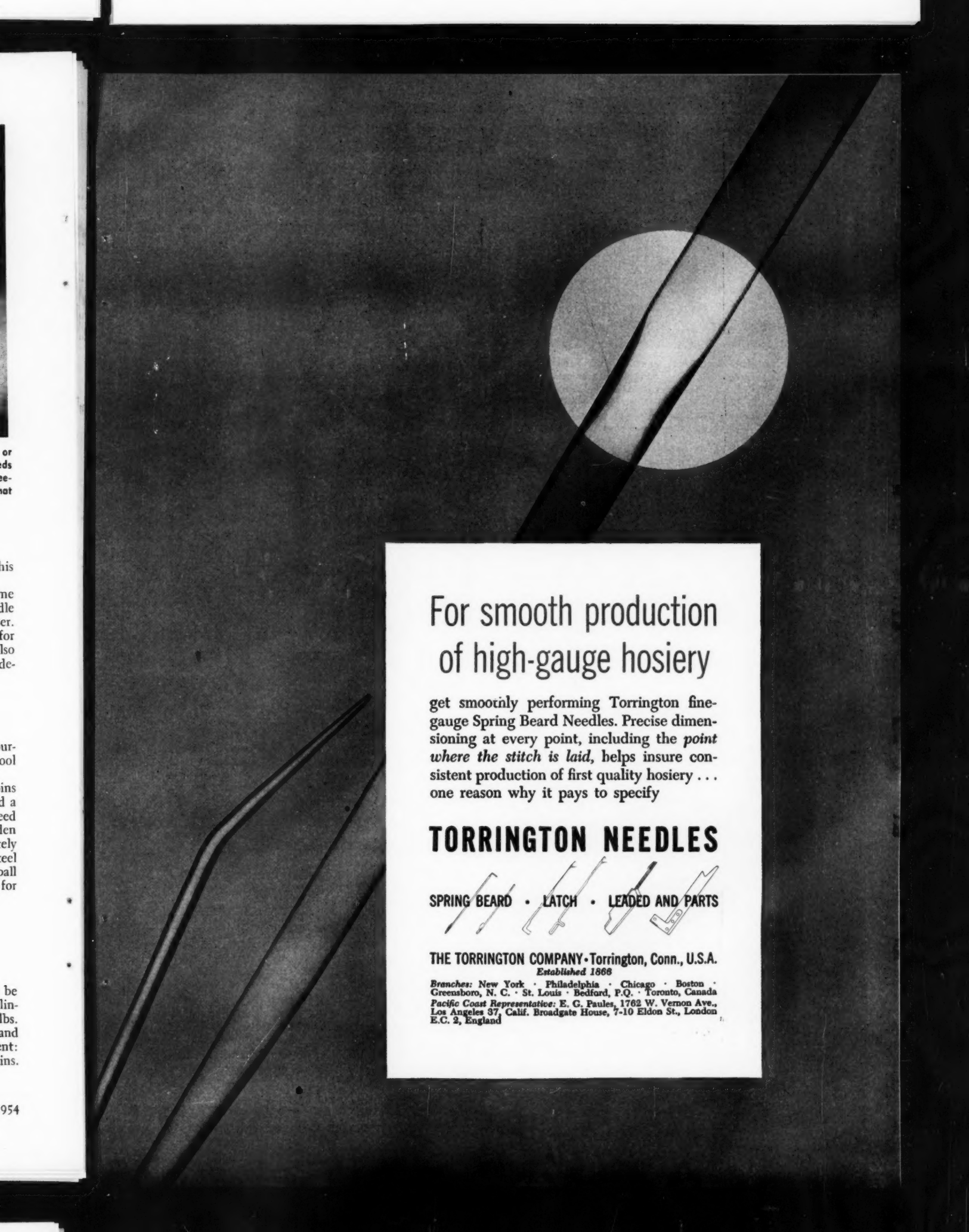
The distance between the front rolls and point of pins on the first cylinder can be varied from 0 to 4 ins., and a speed variation of 3 to 1 between feed apron and feed rolls is possible. Unless otherwise specified, a wooden lattice feed apron is standard. Each cylinder, approximately 34 ins. in diameter, holds 15 lags with casehardened steel teeth, which have self-locking nuts. Steel shafts run in ball bearings. Power required is 10 hp. per double cylinder for constant speeds, higher for variable speed.

Circle T-13 on Reader-Service Card

Woolen Precarder Opens and Blends

The Schofield Precarder for the woolen system is designed to blend and open synthetics, wool, blends of wool and synthetics, and other fibers such as asbestos. Features of the Precarder, which is manufactured by William Schofield Co., Inc., 219 Krams Ave., Philadelphia 27, Pa., are an all-steel frame and a new kind of pinning on the workers and cylinder. The main cylinder, roller bearings, feed-roll bearing, and drive are grease lubricated by pressure. Pin wear can be compensated for by turning the cylinder. Production: 2,000 to 5,000 lbs. per hr., depending on stock and method of feeding; power requirement: 10 to 20 hp.; sizes: 42, 48, and 60 ins.

Circle T-14 on Reader-Service Card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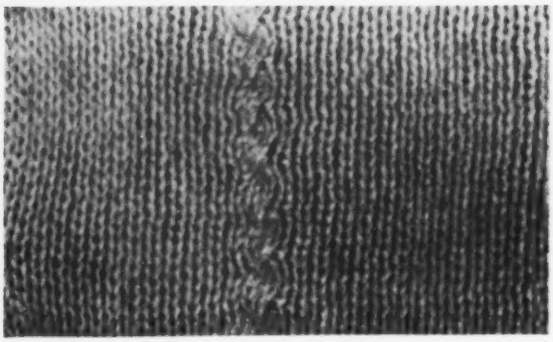
Fashion Marks Imitated



IMITATION FASHION MARKS are made with the Fashion Stitch machine. One thread is used; and this thread can be the yarn used to knit the garment. The machine, made by Lewis Invisible Stitch Machine Co., 129-131 W. 22nd St., New York 11, N. Y., has a cylinder-type arm and a removable flat work plate. The plate is used to apply the stitch before the open sleeves and sides are closed.

Circle T-15 on Reader-Service Card

New S.-L. Comber Brush Has Stainless-Steel Bristles

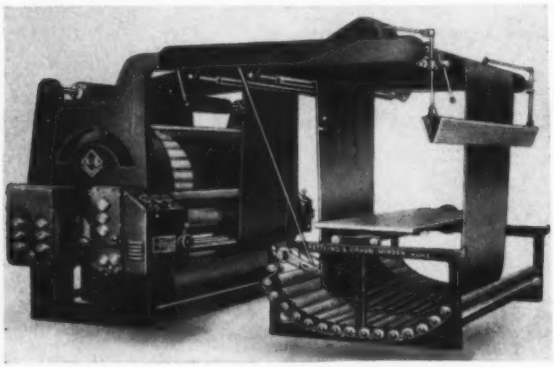
A stainless-steel brush for use on combers has been developed by Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass., in cooperation with Elmwood Brush Co., Easthampton, Mass. The brush is used to clean and burnish the needles on the half lap.

In a 20,000-hr. mill test, routine cleaning of half laps was eliminated. Besides the saving of this cleaning time, routine setting of the brush to the half lap is cut because of the wearing quality of the stainless-steel brush.

The bristles are set in an aluminum core, which can be reused when bristles need to be replaced. The stainless-steel bristle is also nonstatic.

Circle T-16 on Reader-Service Card

Napper Features Infinite Control



TWENTY-FOUR-ROLL NAPPER, made by Kettling & Braun in Germany, is available in the U. S. from Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. The Type KR 52 napper features an infinitely variable feed control within a range of 180 to 800 ft. per min. and an infinitely variable speed control of the rolls. Other features are the sturdy frame with all rotating parts within the frame, the V-belt drive, and control panels on both sides of the machine.

Circle T-17 on Reader-Service Card

Perforated-Metal Screens Need Infrequent Cleaning

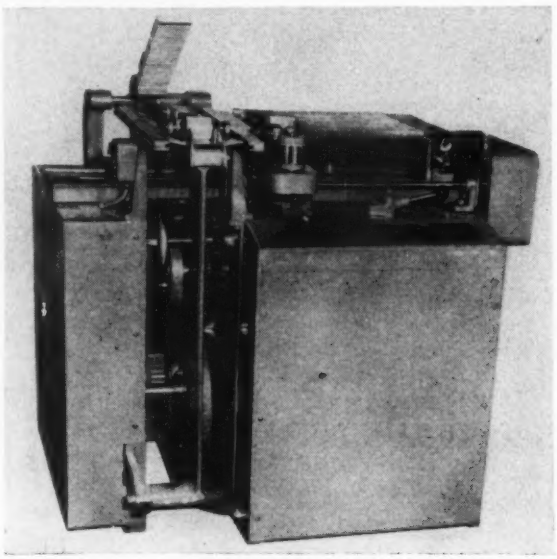
After 18 months of mill trials, perforated-metal screens for pickers are available from Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass. The surface area of the perforated screen is approximately 70% of the total area; but no increase in fan speed is necessary, and the stock sheets up firm and uniform.

A feature of the new screen is the absence of sag across the face of the screen, but only two heads are used for support. A uniform setting of $\frac{1}{16}$ in. can be maintained.

The mill tests indicate that the screens can run up to 48 hrs. without cleaning.

Circle T-18 on Reader-Service Card

Long-Fiber Stapler



SCHLUMBERGER ANALYZER for stapling wool and long-fiber synthetics is available from Uster Corp., Charlotte, N. C. This instrument automatically sorts a large sample of 2- to 14-in. fibers in 15 mins., and a complete analysis, including normal calculations, can be made in about an hour. Accepted as the standard by the Bradford Institute of England, the Schlumberger Analyzer gives a fiber array curve and the average fiber length in standard terms.

Circle T-19 on Reader-Service Card

Magnetic-Amplifier Control

A new motor-speed control called The Franklin Drive has been introduced by Franklin Control Corp., 1975 S. Allis St., Milwaukee 7, Wis.

A magnetic-amplifier adjustable-speed drive without tubes of any sort, The Franklin Drive is easily mounted and installed so that any machine operator can select the exact speed desired. Once the speed is set, it remains nearly constant as the load on the motor changes. Even at 50 rpm., the speed does not drop off when load is applied; it holds practically constant to loads twice the rated torque.

The drive will operate many years without attention. There are no adjustments to be made, and the drive operates properly with supply voltages ranging from 200 to 250 v. with no sacrifice in life. Additional features: instant starting, high overload capacity, and proper operation over a wide ambient-temperature range.

Circle T-20 on Reader-Service Card

SYTON

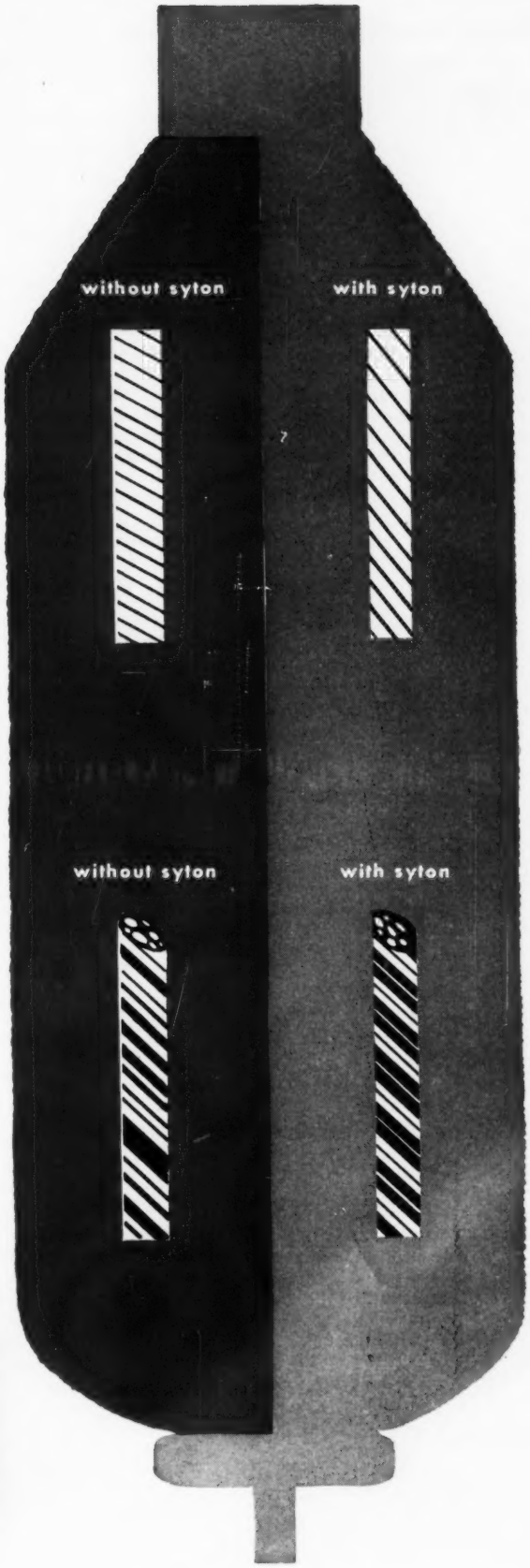
How It Increases Spinning Efficiency

Syton works by increasing interfiber friction. Fibers are run through an emulsion of Syton and become coated with it. This coating, consisting of hundreds of microscopic particles, increases friction and you get less twist for equal interfiber drag.

Reduced segregation of dissimilar fibers and other advantages are obtained with Syton. There is less fly and waste, more condensed rovings, fewer ends down, faster machine speeds. The yarn itself is also more uniform and possesses higher strength.

Here are the answers. Send for this complete booklet, "Profitable Spinning of Wool and Wool Blends with Syton." Write on your company letterhead to Inorganic Chemicals Division, Monsanto Chemical Company, 710 North 12th Street, St. Louis 1, Missouri.

Syton: Reg. U. S. Pat. Off.



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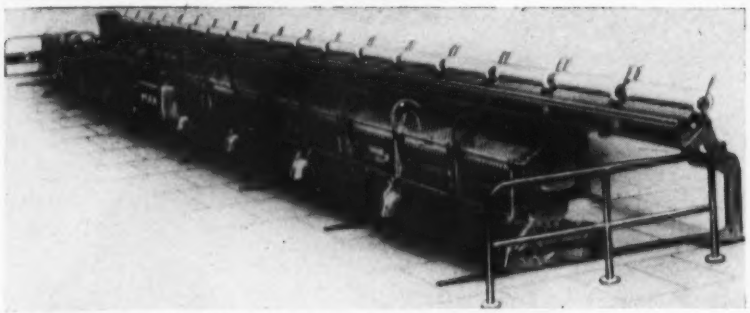
Improvements Made to MAK Mule



MAK MULE, Type 640, has been redesigned with an enclosed control unit mounted below the spindles in the middle of the carriage, which is now used only for spinning. Spindles are driven by gearing, and the carriage is driven by roller chains that distribute power over the full length of the carriage. No clutches or change wheels are used, and an infinitely variable transmission controls intermittent movements. Draft readings are shown on an indicator, and closed gear units are connected to a pressure lubricating system. With these improvements, the mule, made by Maschinenbare Kiel A. G., Kiel-Friendricksdorf, Germany, has increased speed, reduced power consumption, increased spindle capacity, and more spindles per unit area.

Circle T-21 on Reader-Service Card

Split Hydraulic Transmissions for Textile Drives

A new split hydraulic transmission for textile machinery is available from Vickers, Inc., 1400 Oakman Blvd., Detroit 32, Mich. Completely sealed and self-lubricated, the drives have a long life with little maintenance.

Standard units to meet the operational requirements of slashers, pickers, dyebecks, and continuous washers have been developed. Pump, motor, and valving are combined for an efficient, positive-displacement, fluid-power transmission with infinitely variable speed control. The pump and the hydraulic motor have controls for regulating output speed and power characteristics; acceleration and deceleration rates are independently adjustable; and existing push-button stations can usually be modified and used.

Piston pumps are available from 0.20 to 36.5-hp. input ratings, with an output up to 58 gals. per min. Motors can be selected for output requirements from 3 to 25 hp. Duty can be continuous, intermittent, or continuous reversing without shock. Horsepower and ratings are based on continuous duty at maximum loading. Standard a.c. electric motors are used.

The slasher drive requires 7½ hp. at 1,200 rpm. for production of 80 yds. per min. It is installed between the cans and the delivery roll. Tension is automatically maintained throughout the warp build-up to any preset value for loom beams with a finished diameter up to 42 ins., and tension values remain constant over beam-diameter build-up ratios as high as 7 to 1.

Circle T-22 on Reader-Service Card

Gill-Box Guard Prevents Hand Injuries

A guard that keeps operators' hands away from the fallers and rolls of gill boxes has been developed by F. H. Bentham Ltd., Bradford, England. The guard can be made of wire mesh or a transparent plastic material; and with either material, the operator can see the sliver passing through. For gill boxes with individual drives, the switch is held down by a projecting plate on the guard until the guard is tripped. For belt-driven machines, the belt is automatically transferred to the loose pulley when the guard is raised.

One modification to the machine is required: a guide plate is fitted between the back rolls and the fallers to support the slivers and make hand feeding unnecessary.

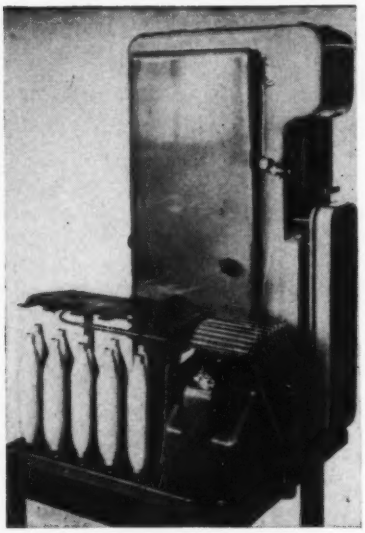
Circle T-23 on Reader-Service Card

Improved Testing Chamber

The temperature testing chamber made by Statham Development Corp., 12,411 W. Olympic Blvd., Los Angeles 64, Calif., has been improved with a loading port for adding dry ice, an increased maximum temperature range to 350° F., and a thermometer mounted in the front of the chamber.

Circle T-24 on Reader-Service Card

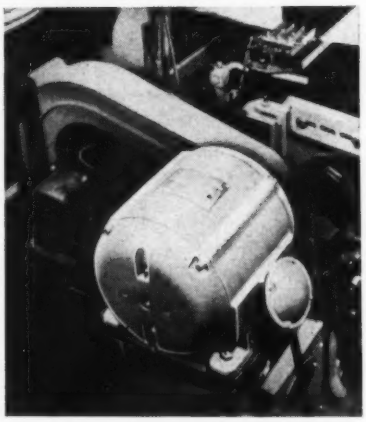
Faster Yarn-Strength Tests



MULTIPLE-BOBBIN ATTACHMENT for the automatic yarn-strength tester available from Uster Corp., Charlotte 8, N. C., enables up to 10 bobbins to be tested at the push of a button. The time necessary to make large numbers of break and elongation tests has been substantially reduced.

Circle T-25 on Reader-Service Card

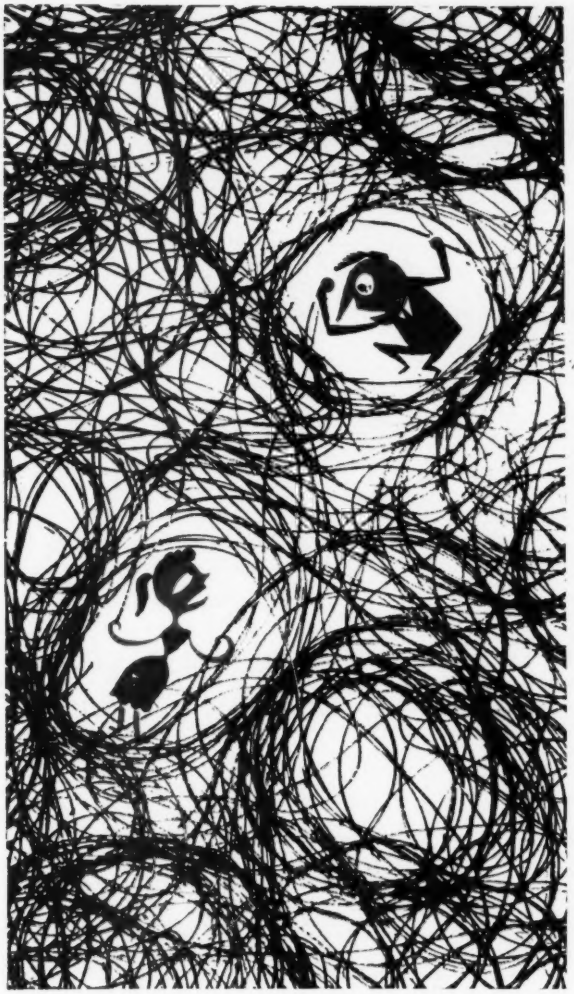
New Loom Motor Has High-Inertia Rotor



LOOM MOTOR developed by Crocker-Wheeler Div., Elliot Co., Jeannette, Pa., has a high-inertia rotor and uses no flywheel, transmitter arrangement, or external inertia aids. To withstand the shock of fluctuating loads, roller bearings are on the shaft end and heavy-duty ball bearings on the front end. The motor is available in ratings from ¾ to 2 hp., with foot or three-point mounting. Smooth contours and the cast-iron frame protect the motor from lint.

Circle T-26 on Reader-Service Card

CONTINUED ON PAGE 200



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Circle D-1 on Reader-Service Card

Industrial Fungicide

Collatone

. . . in liquid form. Practically nontoxic and has no objectionable odor in useful concentrations. Does not affect solubility of albuminous material or cause discoloration. Used in sizes and finishes to retard mildewing. Lehn & Fink Products Corp., Bloomfield, N. J.

Circle D-2 on Reader-Service Card

Synthetic Detergent

Wixyn 100

. . . a 100% active nonionic synthetic organic detergent that provides maximum soil-suspending and -removal properties. Low-sudsing, good solubility and effectiveness in hard or soft water, efficiency at low temperatures, free-rinsing, and effective as a scouring agent for synthetics. Good definition in soaping off prints. Compatible with hydrocarbons, esters, and mixed solvents. Wica Chemicals, Inc., Charlotte, N. C.

Circle D-3 on Reader-Service Card

Flame-Resistant Agent

Nylon No-glow

. . . washfast material offers protection against flash fires. When used with amine-aldehyde synthetic resin, particularly on nylon fabrics, retards complete combustion and eliminates afterglow. Applicable over a wide pH range and compatible with nearly all resins and finishing compounds. Chemical Products Corp., Jackson Lane, West Paterson, N. J.

Circle D-4 on Reader-Service Card

Yellow Acid Dye

National Fast Light Yellow 2GML

. . . the latest addition to National's line of acid dyes. When applied to wool from a bath acidified with sulfuric acid, it produces moderately bright shades of clear yellow. May be dyed from weak acetic-acid dyebath; has fair affinity for wool in a neutral bath. Fast to light, water, sea water, and perspiration. Recommended for coloring carpet, bathing-suit, and sweater yarns. National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Circle D-5 on Reader-Service Card

Nonirritating Finish

P-5

. . . a finishing chemical added to the final bath to impart a permanent nonirritating finish to nylon, wool, and other fibers. Available in limited quantities. Phillips Laboratory, Kearney, N. J.

Circle D-6 on Reader-Service Card

Detergent for Synthetics

Chem ND

. . . a detergent with high emulsifying properties for oils, greases, and waxes. Selective solution effect on surfaces of synthetic fibers makes it useful as a scour, detergent, and dyeing assistant. Compatible with alkali, bleaching agents, hard-water conditions; scours effectively at cold and boiling temperatures. Eliminates necessity for adding solvents to the liquor. Chemical Products Corp., Jackson Lane, West Paterson, N. J.

Circle D-7 on Reader-Service Card

Textile Pigments

Hiltone

. . . a new line of textile pigment colors with good fastness properties. Includes finished inks ready for printing on cotton, rayon, acetate, and some other synthetic fibers and padding colors applied from a water system. Offered in a complete range of shades fast to light, washing, and crocking. Hilton-Davis Chemical Co. Div., Sterling Drug, Inc., 2235 Langdon Farm Road, Cincinnati, Ohio.

Circle D-8 on Reader-Service Card

Anthraquinone Vat Dye

National Carbanthrene Olive TR Paste

. . . a recent addition to National's line of anthraquinone vat dyes; produces olive-gray shades of a reddish cast on cotton and rayon. Applied by usual techniques of dyeing in reduced-bath or pigment-impregnation methods. Fast to light, washing, perspiration, water, stoving, cross dyeing, mercerizing, alkalis, acids, boiling soap, chlorine, rubbing, and hot pressing. National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Circle D-9 on Reader-Service Card

Silicone Rubber Coating

Silastic 132

. . . an improved silicone rubber coating for glass cloth or synthetic fabrics; retains the name, price, and basic properties of Silastic 132, the compound it replaces. Said to have better crease resistance and good retention of dielectric strength. Dow Corning Corp., Midland, Mich.

Circle D-10 on Reader-Service Card

Soluble Vat Brown Dye

Calco Soluble Vat Brown BY

. . . soluble leuco ester dye suited for printing or dyeing operations. Adaptable to either roller- or screen-printing processes on cotton or viscose, in conjunction with azoics, pigments, or other soluble vats where acid ageing is applied. Good results in dyeing cotton, rayon, linen, and wool fabrics. Good leveling and fastness properties. American Cyanamid Co., Calco Chemical Div., New York, N. Y.

Circle D-11 on Reader-Service Card

Dyes for Wool, Blends

Chrome Fast Bordeaux FBL
Cloth Fast Yellow GW
Cloth Fast Brilliant Red 3BW
Cloth Fast Blue 3R

. . . on men's-wear fabrics, Chrome Fast Bordeaux FBL produces red shades of excellent fastness to light, fulling, and carbonizing. Levels well on top-chrome-dyed tippy wool.

Cloth Fast Colors, Yellow GW,

CONTINUED ON PAGE 198

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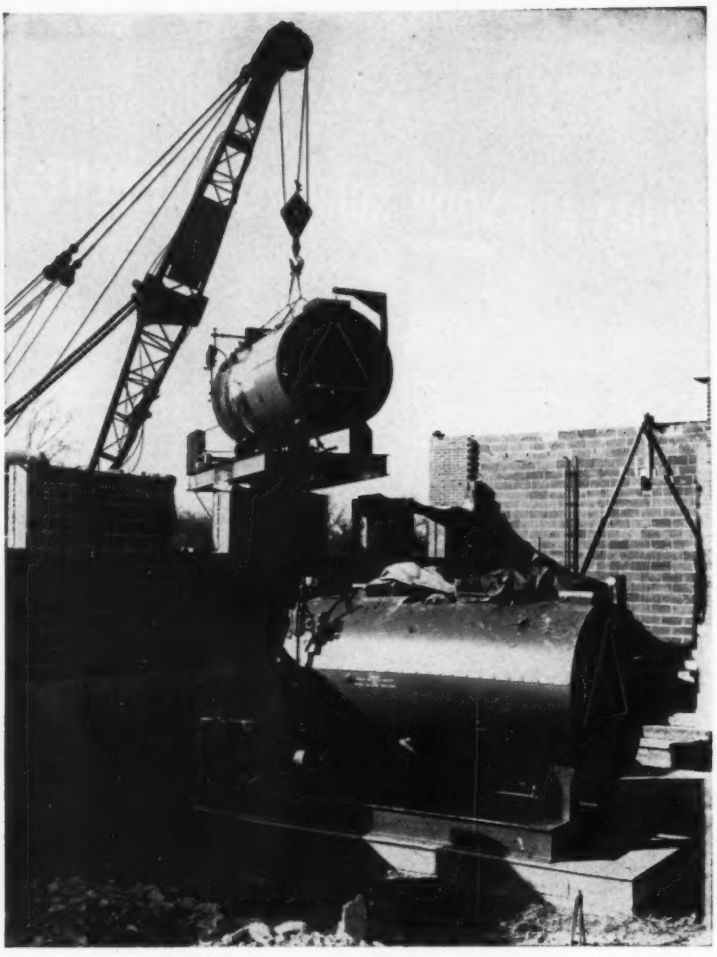
FROM START TO STEAM...



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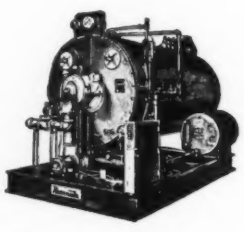
Once installed, *Powermasters* keep right on saving. High fuel economy at all loads, dependable performance, time-saving attention, maintenance-saving accessibility, automatic operating and safety controls, smokeless combustion, and hospital-clean operation ... these are reasons steam costs go down where *Powermasters* go in.

To keep your steam costs in line ... compare *Powermaster*, and you'll see why it is so widely used in schools, colleges, institutions, industrial plants, and all types of buildings. Send NOW for new bulletins on *Powermaster's* cost-saving advantages.



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LETTERS FROM READERS

Round Table

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD
330 W. 42nd St., New York 36, N. Y.

SYNTHETIC-FIBER TABLE

Dear Editor:

We have had a great deal of use from your 1953 Synthetic-Fiber Table. . . . We wondered if you had revised this table for the year 1954 or if you are planning a revision soon.

You do an excellent job with your various tables that are available from time to time. Keep up the good work.

P. J. OSBORNE
R. C. Osborne & Co.
Philadelphia, Pa.

[TEXTILE WORLD's *Synthetic-Fiber Table is revised every other year. The next edition will be published in our Sept., 1955, issue. Our Annual Synthetics Section this year (Sept., '54, p. 59) reviewed synthetic-fiber developments since the 1953 table was prepared.*—EDITOR]

WHY WE'RE LOSING MILLIONS

Dear Editor:

I found your editorial, "We're Losing Millions of Dollars," [TW, Aug., '54, p. 4] exceptionally good.

At various times during the last 15 years, mill managers and sales executives have pointed out that the synthetics field is not integrated into one whole to the same extent that cotton is and that there are separate groups of manufacturers, finishers, brokers, and garment manufacturers, each independent of the other so far as promotional efforts are concerned. By now there must surely be a grass-roots movement afoot somewhere to rectify this situation, even though it does not approach that of the cotton industry in effectiveness.

Such companies as Burlington Mills, Textron, and a few others are acquiring control of other concerns; but these mergers are horizontal (on a manufacturing level) and still leave finishing, brokers, and garment manufacturers as separate entities.

The garment manufacturers can't be expected to bear all the cost of promotion. Brokers are too busy guessing which lines of fabrics will sell next season. The mills, with very few exceptions, are too busy with their own production problems to go into advertising very deeply.

Therefore, as I see it, the only thing to do is to get everybody concerned to bury the hatchet and organize and assess all phases of the synthetics industry to support the garment manufacturers in a whopping big promotion program to make everyone a lot more clothes-conscious.

Until the situation is rectified somewhat along these lines . . . the synthetics industry will continue to starve or feed fitfully with every slight fluctuation in our over-all economy.

ERNEST R. BECKNER
Lexington, N. C.

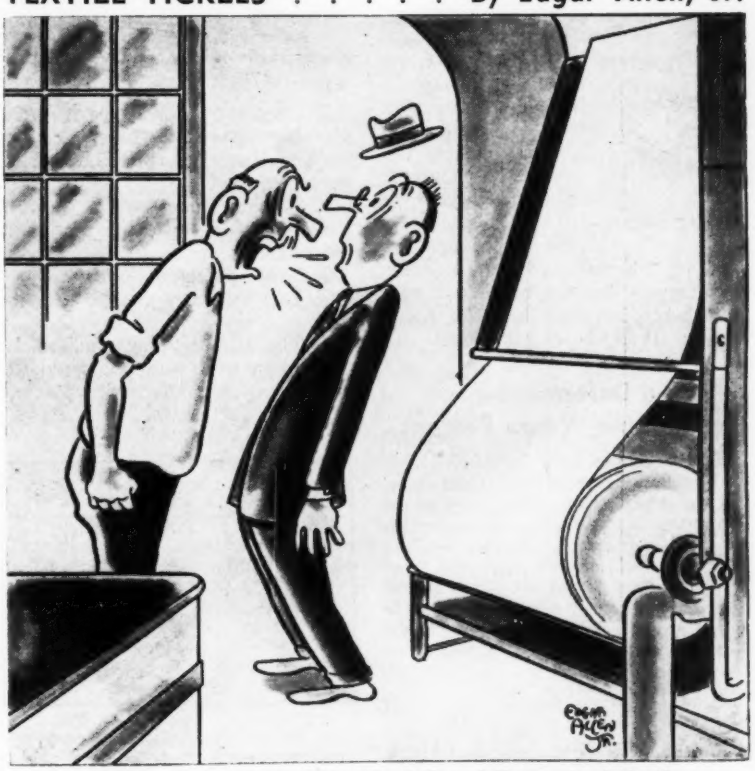
Dear Editor:

We all were impressed with your August editorial. . . .

For my money, we still have a long way to go before the textile industry has a really comprehensive picture (statistical, I mean) of just where it stands in the competition for the consumer's dollar.

JACK C. WERNER
Werner Textile Consultants
Atlanta, Ga.

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



*"Get the *—*! title straight, will ya! I'm a doffer—not a duffer."*

Questions AND Answers

►TEXTILE WORLD's editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Make These Settings To Get Uneven Wool Yarns

Technical Editor:

We want to make a very uneven woolen yarn that ranges in size from ¼ to 1 run. We have standard 60x60 tape-condenser cards with frame and mule spinning. So far, we can't make a yarn uneven enough. Do you have any suggestions? (9815)

Set the workers on the card this way:

1st Cylinder
1st worker—left side 22 gauge
right side 24 gauge
2nd worker—left side 24 gauge
right side 22 gauge
2nd Cylinder
1st worker—left side 24 gauge
right side 26 gauge
2nd worker—left side 26 gauge
right side 24 gauge
3rd Cylinder
1st worker—left side 26 gauge
right side 28 gauge
2nd worker—left side 28 gauge
right side 26 gauge

Apply different tensions on the tape condenser. Vary the number of rubs per minute on each bank by giving the aprons an uneven rub action.

How To Determine Reworkable-Waste Percent

Technical Editor:

Do mills weigh reworkable waste by process and department and then calculate the percentage of waste against the production of the department? Or do they just feed the waste back into the picker and figure the percentage on the net cotton opened less nonreworkable waste taken out in opening and picking? In the case of setback laps, are they counted as reworkable or not? (9819)

Mills generally collect, weigh, and calculate the percentage of reworkable waste by each process where a department includes more than one operation that returns waste for reprocessing.

The base for estimating the percentage of reworkable waste on each process is the net amount, in pounds, of stock fed into that process, rather than the amount of product delivered by the process.

The total percentage of reworkable waste made in any department or plant will be the sum of the individual percentages made on each process. Basing the total percentage on the total reworkable waste made in pounds and the total net cotton opened will not give a true comparable value.

Rejected laps should be treated the same as lap waste or any other kind of good fiber waste, reported as reworkable waste, and charged to the picking process. The nearest correct base for figuring picker reworkable percentages is the total net stock fed to the opener feeders, including all reworkable waste fed into opener or waste-feeder hoppers. Where pickers are equipped with hank clocks, the net weight of rejected laps must be deducted from the production indicated by the hand clock to give the net poundage delivered to the card room.

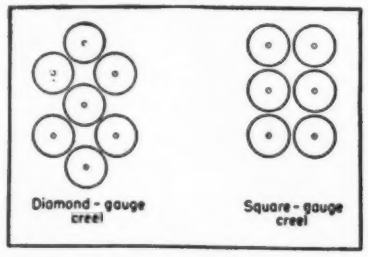
Diamond-Gauge Creel Is Best for Large Packages

Technical Editor:

Is a diamond-gauge creel better than a square-gauge creel for warping large packages? (9813)

Diamond-gauge creels have several advantages over square-gauge creels for warping large packages. The advantages are:

1. Creeling time can be reduced from 12 to 15% with a diamond-gauge creel.
2. Yarn breakage is lower.
3. Yarn mixtures can be detected easier.
4. The diamond-gauge creel allows the package to be turned into position for creeling from the top or the bottom.



DIAMOND-GAUGE CREELS are more suitable than square-gauge creels for warping large packages.

How To Distinguish Between Nylon, Dacron, and Orlon

Technical Editor:

How can I rapidly distinguish nylon, Dacron, and Orlon? (9816)

Dacron and nylon can be distinguished from each other by a burning test. The smoke from burning Dacron is dark and contains soot. The smoke from nylon is usually white with no ash.

The bead formed from burning nylon and Dacron is nearly round and difficult to crush with the fingers when it cools. Nylon and Dacron burn slowly, and they usually stop burning when they are removed from the flame.

Orlon forms an irregular bead that is dark and has an irregular shape. After cooling, the bead is hard, but brittle, and can usually be crushed between the fingers.

Where Spun Synthetic Yarns Are Finding Their Uses

Technical Editor:

What is the trend in uses of spun-synthetics yarns? (9817)

Nylon is used 100% in 2/24s to 2/36s worsted-spun yarns in socks but is rapidly being replaced with Helenca, textured yarns, and Ban-Lon. It is also used in sweaters in woolen- and worsted-spun 2/20s to 2/32s of 1.5-den. to 3.0-den. staple. The staple length is 1½ to 6 ins., according to the spinning system.

Many spun-nylon yarns are blended with wool, cotton, rayon, and acetate for suits, socks, sportswear, shirts, upholstery, and sweaters.

Most Dacron production goes into spun yarns. It is used on the cotton system, both as 100% Dacron and in 75-25 blends with cotton for summer suitings and shirts. Blends with 50% wool are popular for men's suits. The yarns are generally two ply and the staple fits the spinning system.

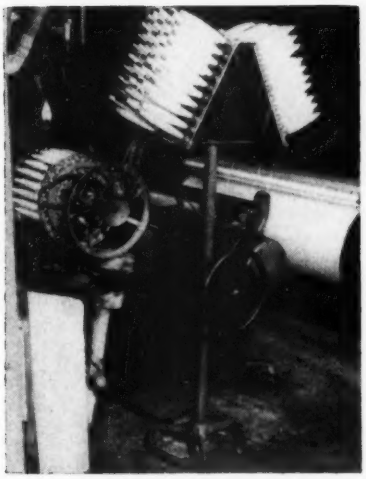
Orlon is used in knitwear with wool made in 1/26s yarn from 85% Orlon and 15% wool. Another blend is 50-50 wool and Orlon spun on the woolen system. A 50-50 Orlon-cotton blend is used for seersucker. Orlon spun on the silk system is used in women's-wear fabrics. Little Orlon is used in hosiery. High-bulk Orlon is said to make an excellent sweater.

Acrilan is viewed with interest for blankets. These yarns are spun on the woolen system.

Dynel is used in blends with cotton for underwear. Yarns usually are 24s to 36s.

Kinks AND SHORT-CUTS

This Filling Stand Prevents Sloughing



STORED FILLING at the loom is within easy reach of the batteryhand. There's no vibration, and the filling is kept clean.

We had always run cotton yarns on our looms and were upset recently when we bought new looms and started weaving fabrics of filament-rayon yarns because we had a lot of sloughed-off filling.

Our filling racks were mounted on the looms, and filling set on pinboards was laid on the racks. The vibration of the looms loosened the filling on the bobbins and caused it to slough off. We also had a lot of waste filling because the loose ends wound themselves around the crankshaft of the loom and were pulled off.

We now have a new method of storing the filling at our looms that prevents sloughing off. A new-type stand holds the filling.

A section of 1½-in. pipe is inserted in the hub of an old brake wheel from a discarded loom. The hub of the wheel sticks up, and the brake section (the wheel rim) sits on the floor.

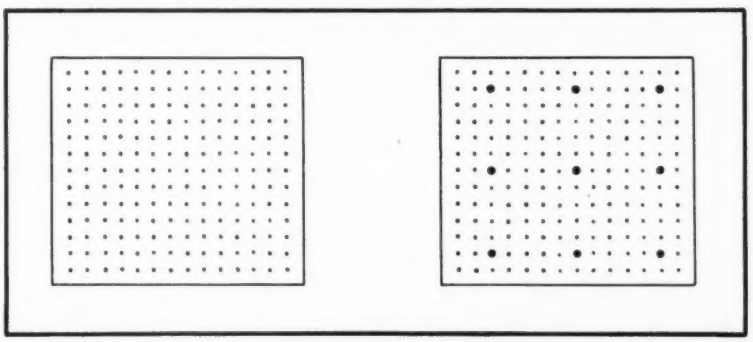
A strip of iron is welded horizontally to the other end of the pipe. Another section of the same-size strap iron is bent in the middle to form an angle, and the ends are welded to the ends of the first piece to form a triangle, with the horizontal piece across the top of the pipe serving as the triangle base.

A rectangular form the size of our pinboards is welded from 1-in. angle iron, and this form is welded to the sides of the triangle.

The finished rack holds two pinboards of filling, as shown in the accompanying picture. The front pinboard is just back of the battery of the loom and is within easy reach of the batteryhand. When the filling on the first pinboard is exhausted, the batteryhand turns the stand around so that the second pinboard of filling can be used.

Because the bottom of the stand rests on the concrete floor of the weave room and does not touch the loom, there is little vibration and sloughed-off filling is eliminated.

New Paper Speeds Tricot Designing



LARGER DOTS on tricot-design paper at intervals of six wales and six courses make complex designs easier to make. The conventional design paper is shown at the left and the new paper at the right.

We found the conventional tricot-design paper difficult to use when we made complicated patterns. We made a design paper that we find much easier to use because the wales and courses are easier to count.

The conventional point paper was used as a base, and heavy dots were made at intervals of six wales and six courses. We now draw the design in the conventional manner. *Hokao Fukaya, Japan*

A 2-Yd. Reel Simplifies Handloom Warping

In making section beams for experimental patterns, I ran into trouble when I put half a turn too much on one section and found that I was half a turn short for the last section of the warp.

To prevent this loss of warp yarn, I made a reel to measure 2 yds. per revolution. For a 9-yd. warp on 12 sections, I reel 54 turns of warp yarn (108 yds.) and wind each reeling off on 30 spools.

When the creel is full, I take out a spool and mark every 9 yds. by sewing a short piece of colored thread through the warp thread. The 30 ends of warp are threaded through a tension and spreader comb.

I turn the warp roll until a marker thread comes through the comb and fasten the ends with adhesive tape. Then the 30 ends are cut and moved over for another section. *Walter A. Simond, Essex Junction, Vt.*

BOBBIN MOVES TO THE LEFT, across the fixed knife, as the double-acting air cylinder is operated from the three-way valve.

Mill-Made Unit Cuts Yarn off Bobbins

Our waste-salvage section used to spend a lot of time cutting yarn off bobbins, and the operation was slow and dangerous.

Now we use a homemade unit that allows one man to clean 40 bobbins a minute.

The machine is built around an air-operated cylinder that pulls a bobbin across a fixed blade.

The 2½x10-in. cylinder has a 9-in. stroke and operates on our 80-psi. air supply. The cylinder, being double-acting, requires air at both ends for the cutting stroke and the return stroke. A three-way valve controls the air and operates the machine.

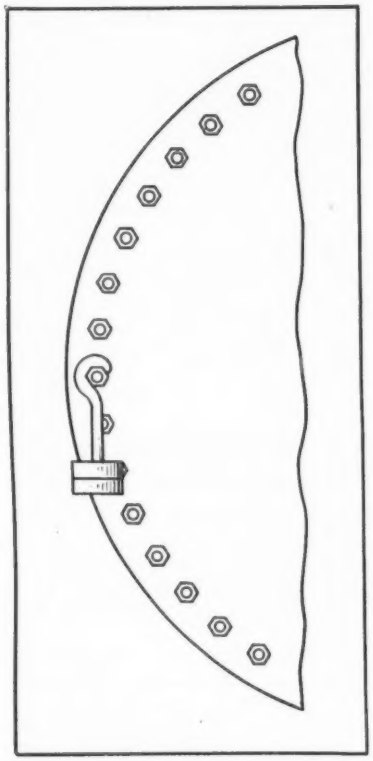
The fixed blade is made from a ⅜x⅜-in. tool bit ground to suit.

The bobbin is held by a shuttle-holder spring onto a hinged-head spindle.

The knife is set to come within ¼ in. of the bobbin.

We mounted the whole unit on an I-beam. *A. Simpson, Grandmere, P. Q.*

How To Check Bearings On Your Slasher Cans



HANG A WEIGHT (2 or 3 lbs.) on the edge of the cylinder in a straight line out from the bearing. If the bearings are in good shape, the cylinder should turn easily. Check several points around the cylinder because sometimes the bearing sticks only part of the time. Be sure that the cylinder doesn't have a heavy side that tends to stay near the bottom.

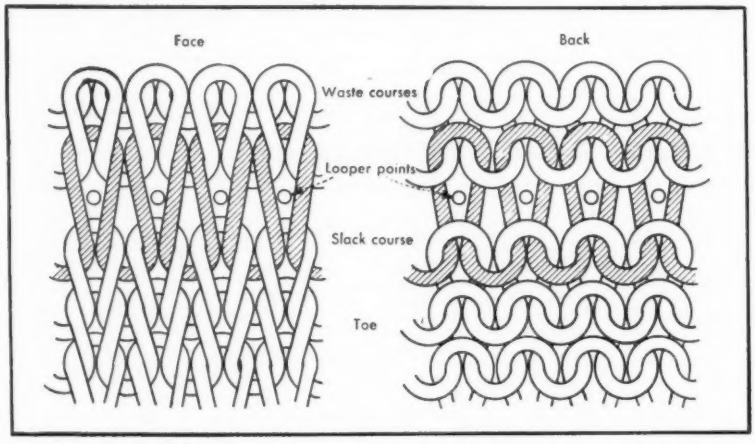
If you follow these instructions, you shouldn't have excessive stretch from yarn-pulled cylinders. *Seydel-Woolley Co., Atlanta, Ga.*

How To Align Loom Lays Quicker and Better

Until recently, we had always re-aligned all our loom lays in the weave room. The head loomfixer tore the loom lay down, replaced all worn parts, and realigned the lay right on the weave-room floor. Consequently, the loom was out of production for a long time.

At the suggestion of Lee Sizemore, an employee of our White Oak plant, we are now assembling loom lays away from the loom. When a lay needs aligning now, the head loomfixer lifts out the old lay and sets in one that has already been aligned. *The Cone Textorian*

Knitted-Fabric Construction Helps Looper Training



KNITTED-FABRIC LOOPS speed training by showing learner loopers where the points must go.

I find that drawings of knitted-fabric loops are very helpful during the initial stages of a looper-training course. The drawings help to explain the back and face of a knitted fabric, the looper course, the roving courses, and where the points of the looper must go.

I draw the face side of a plain knitted fabric on a sheet of paper and color the loops; and on the opposite side of the sheet, I trace the back side of the loops. Then, on the second course I make a small pinhole in each loop to show the learner where the points go.

The learner quickly understands why the face and back of the fabric look different. I let the learners look at the drawings closely while I explain, and they progress very quickly. *Paul A. Faucher, Chicoutimi, Que.*

How To Speed Up Chuck-Jaw Changes

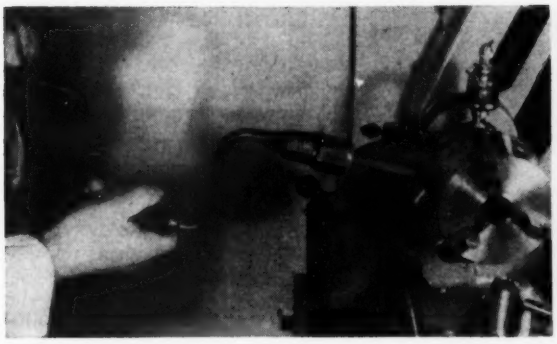


Fig. 1

CARPENTER'S BRACE holding a piece of square-section steel is used to rapidly move the chuck jaws.

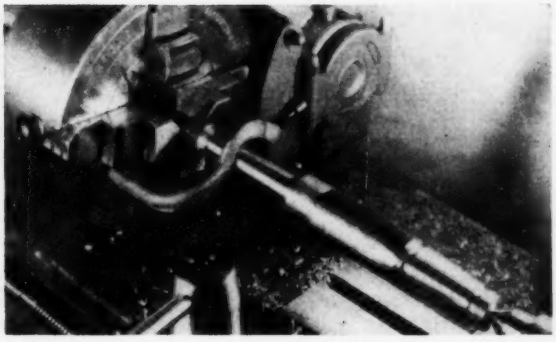


Fig. 2

STEEL BAR, gripped in the chuck jaws, is machined to a point and used as a headstock center.

Engine-lathe operation sometimes involves many chuck-jaw changes, such as reversing the jaws of an independent jaw chuck or changing from plate-gripping to bar-gripping jaws on the three-jaw self-centering chuck. Since these changes can be tiresome and time consuming, a lathe worker can adopt some short cuts to reduce fatigue and save time.

The jaws of a self-centering or independent jaw chuck can be rapidly moved without much effort with the special chuck key shown in Fig. 1. The key is made of a carpenter's brace with a piece of square-section steel gripped in its chuck. If the square piece fits neatly in the key hole of the chuck screw or pinion, the jaws can be moved rapidly.

On bigger chucks, it may not be possible to use a carpenter's brace, and a special key has to be made. A satisfactory key can be made from a length of circular steel bar with a knob at one end and a square to fit in the chuck at the other end. The bar should be bent in the shape of a brace.

When he sets up the lathe for machining work between centers, the operator must remove the chuck, substitute the catch or driver plate, fit the live center into the headstock spindle nose, and check the trueness of the center. The time and fatigue involved in performing this series of operations rises in proportion to the lathe and chuck size. When chucks weigh over 56 lbs., the lathe operator may require a helper to assist in removing the chuck.

A method of avoiding chuck removal in doing a turning job on centers is illustrated in Fig. 2. A short piece of steel bar gripped in the chuck jaws is machined with a turning tool to form a center point. The process automatically produces a center that is true. The work is then mounted between the turned center and the tailstock center in the normal manner and is driven by the bent tail of the driving dog.

On heavy lathes, this practice is a definite timesaver. However, on lathes up to about 6 ins. center height, no time is saved over the conventional practice. *Clifford T. Bower, London, England*

$500 for Best Kink in 1954

$25 for Best Kink in Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill men. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

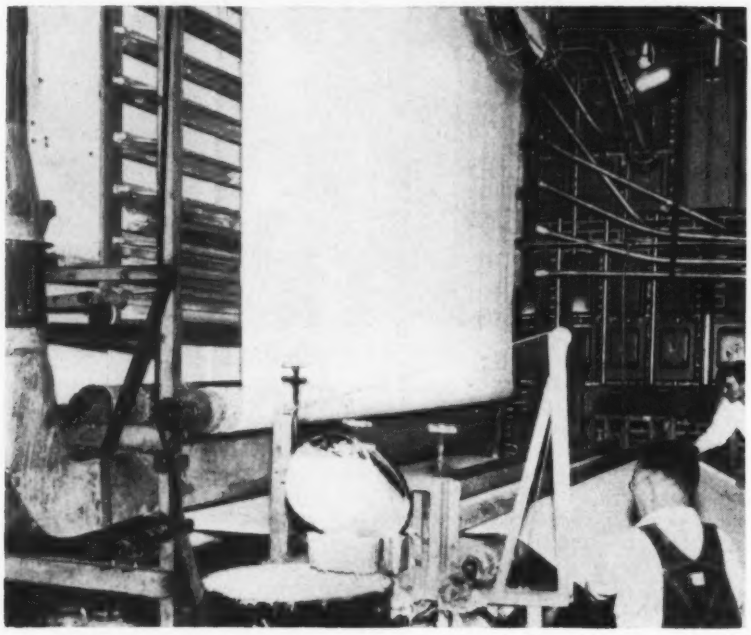
Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1954.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

How Latex Backing Is Cured at 8 to 20 Ft. per Min.



RADIANT HEATERS are set in two banks and at different spacings to cure latex backing rapidly. Heater frames are on wheels to allow withdrawal during starting and stopping periods.

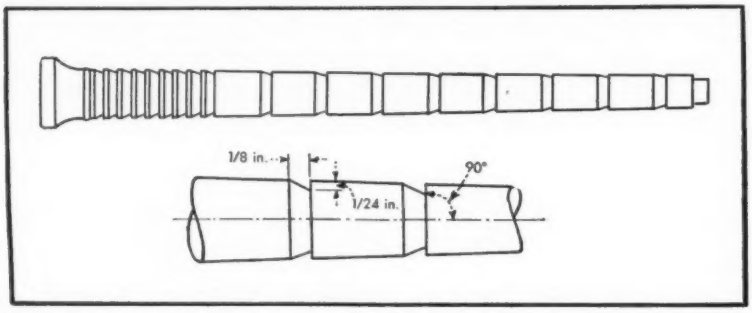
At Patcraft Rug Mill, Dalton, Ga., production of loop rugs was limited by the time required to cure and dry the liquid latex backing.

To speed up the process, Patcraft installed a double-pass far-infrared oven with electric radiant heaters. As a space-saving measure, the heaters are set in two vertical banks to provide intense, uniform heat to the coated side of the web as it travels up and down through the oven. Closely spaced heaters bring the work quickly up to the drying temperature, while others spaced farther apart accurately hold drying temperatures through the remainder of the oven.

The heaters are mounted on frames attached to rollers so that the assembly can be withdrawn from the work during starting and stopping periods. A blower provides circulation through the oven to exhaust moisture-laden air.

Latex is now dried evenly and thoroughly at speeds of 8 to 20 ft. per min., depending on material thickness. Rugs can now be cut immediately and sent to be dyed and finished. *Edwin L. Wiegand Co., Pittsburgh, Pa.*

Regroove Filling Bobbins To Stop Sloughed Filling



NEW GROOVES are cut in worn filling bobbins to prevent sloughing. The grooves are 1/24 in. deep and taper ⅛ in. to the surface of the bobbin toward the butt.

We used to have a lot of weaving trouble caused by filling sloughing off bobbins wound on spinning frames.

We did several things to correct the fault. First, we blamed the spinning department because we thought the yarn was not put on the bobbins firmly. The spinning department made a lot of corrections to their methods, such as changing the travelers and the speed of the frames; but the filling still sloughed off.

Later, we examined the empty bobbins and found that the grooves in the bobbins would not hold the filling in place after the bobbins were polished.

We cut new grooves in the bobbins to correct the trouble. The carpenters who recut the grooves in the shop had to take great care in cutting because of the tapered shape of the bobbins.

A circular cut 1/24 in. deep was taken directly over the old grooves, which were only 1/64 in. deep. The 1/24-in. groove is perpendicular to the bobbin core and tapers toward the butt of the bobbin to the surface of the bobbin about ⅛ in. from the beginning of the cut.

After the grooves were cut, the bobbins were polished; and filling was spun on them at the spinning frame. The new grooves did not break the filling, and they held the yarn firmly. *T. K. Pattabhiram, India.*

Nail Polish and Acetone Aid Circular Knitters

We've found that a vivid red fingernail polish is very useful in marking needles, sinkers, and pattern wheels in timing the needles and sinkers to the wheels. The nail polish dries quickly, is easy to see, and can be easily removed with acetone.

We keep two bottles in a box hanging on the wall near the knitting machines. The acetone bottle has a white cap and the nail-polish bottle a red cap. A fine camel's-hair brush fixed to the cap in each bottle allows us to mark fine-gauge needles, sinkers, and wheels. *Dan Singer, Newton, Mass.*

Jersey Slip Covers Help In Warping Synthetics

We had a lot of trouble with sheepskin patches not sticking to iron cone holders in our warper creel for synthetics.

Now we use a cotton-jersey slip cover as a base on which to glue the patches. The covers are knitted in tubes of slightly smaller diameter than the cone holder and are then slipped on to give a tight fit.

Our patches don't fall over or fail to stick now. *A. E. McKenna, Clemson, S. C.*

Picking-Shaft Bearing Wear Stopped With Oil Bottle

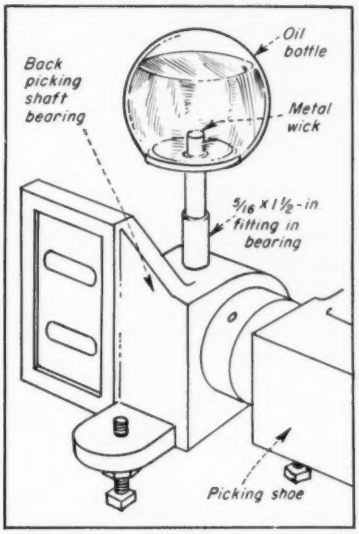
We use large-diameter beam heads on our C & K C-4 looms, and the back picking-shaft bearings are hard to reach to oil on full beams. Because of this arrangement, we used to have a lot of worn picking shafts and bearings, and sometimes the picking shafts froze in the bearings and broke.

We have installed a simple little setup for oiling the back picking-shaft bearings that eliminates much wear.

We removed the small oil cup from the bearing and added a $\frac{5}{16}$x1$\frac{1}{2}$-in. fitting to the oil-cup hole. We filled an oil bottle with oil and dropped it into the fitting.

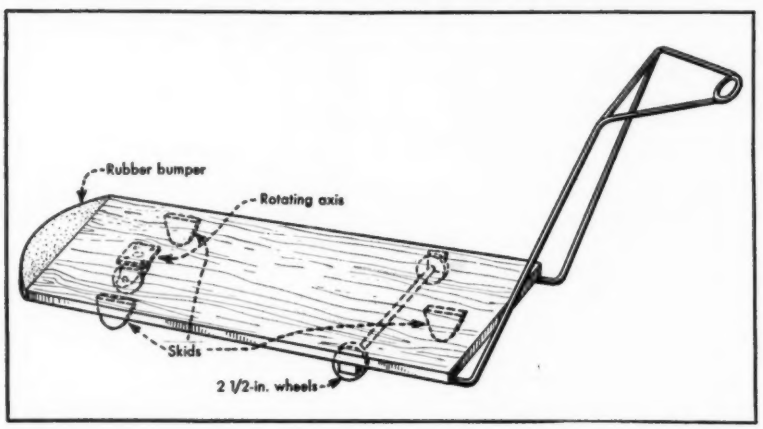
The oil bottle is the type sometimes used on the crankshaft bearings of E-model Draper looms and is about the size of an official baseball. The bottle has a metal wick, and the wick is filed to regulate the flow of oil.

We fill the bottle at each warp-out and then forget oiling until the warp runs out again. *Bernard Dixon, Danville, Va.*



OIL BOTTLE is filled with oil at each warp-out and is dropped right back into the fitting.

Truck Takes Cans From Drawing to Roving



THIS SPECIAL TRUCK is easy to handle and holds three 12-in. drawing cans. It is used by drawing tenders to move full cans from the drawing frames to the roving frames and return empty cans.

Our drawing frames are placed at right angles to our roving frames, and part of the female drawing tender's job is to deliver the full cans to the roving frames and return the empty cans. This small truck has made can hauling much easier for the drawing tender.

The truck carries three 12-in. cans and is 38 ins. long and 12$\frac{1}{2}$ ins. wide. It is made of angle iron and $\frac{1}{2}$-in. round iron stock. It has a wooden platform and three 2$\frac{1}{2}$-in. rubber-tired wheels. The center front caster is equipped with ball bearings and permits the truck to be turned easily in any direction.

Three skids—one on each front corner and one in the rear center—are provided to prevent the truck from tipping.

Then a semicircular rubber plate is attached to the front of the truck as a bumper to prevent damage to the drawing cans behind the roving frames. *M. F. Douville, Rouen, France*

Special Ladder Helps In Lighting Maintenance

ALUMINUM LADDER is light in weight and has special attachments to help the man charged with maintenance of fluorescent fixtures. Rack at top holds fixture and burned-out lamp. Tubes in front hold supply of fresh tubes.

How To Avoid Washboard Shuttles

We have always had trouble with washboard shuttles. No matter how closely we align our reels and lay ends, we always end up with a few looms that make washboard shuttles.

We have been able to reduce the washboard condition by using crocus cloth.

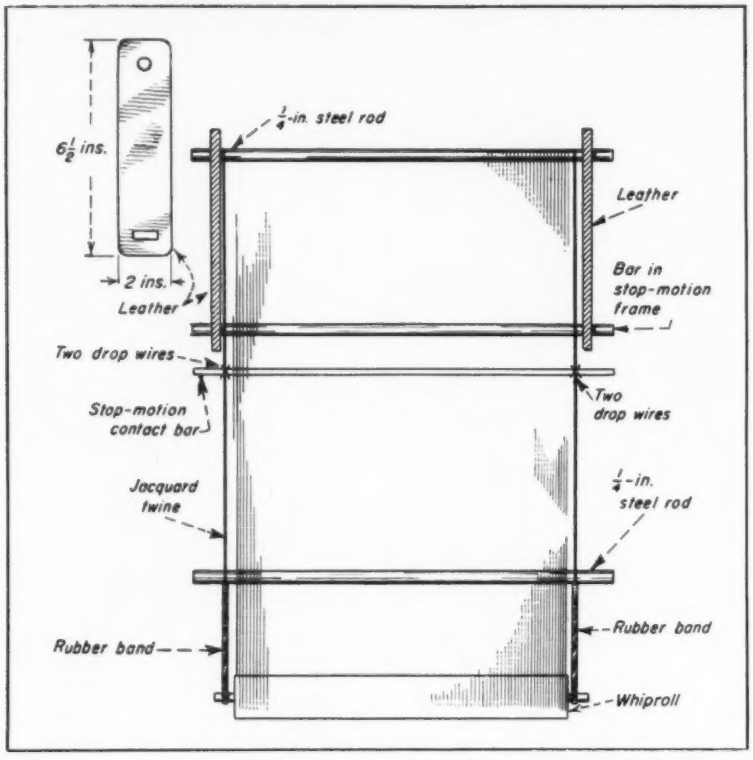
As soon as we cut a pattern out of a loom, our loomfixers remove the shuttle and take it to a workbench. They wet a piece of crocus cloth and remove the fine particles of grit from the cloth. While the grit is still wet, the loomfixers rub it on the back surface of the shuttle.

By the time a new warp is placed in the loom and restarted, the shuttle back is dry. Any residue on the top or bottom of the shuttle is removed with sandpaper.

When the loom is run again, the crocus-cloth residue polishes the reed to a smooth surface, and the residue gradually sheds from the shuttle without damage to the cloth.

We now have fewer washboard shuttles.

This Easily Made Attachment Eliminates Draw-Backs in Weaving



DRAW-BACKS are eliminated because the rolled warp ends strike the steel bar near the whiproll and stretch the rubber band so that a drop wire stops the loom.

We sometimes weave styles of cloth on which draw-backs occur in filament-rayon and silk yarn back of the drop wires. When we tie these warps in the loom, we now use a draw-back preventer.

The preventer is made this way:

A round cold-rolled steel rod of ¼-in. dia. is placed in the warp between the harnesses and the drop wires. The rod is the same length as the bars in the warp stop-motion frame.

On straight draws, the warp is leased with harnesses Nos. 1, 2, and 3 down and 4, 5, and 6 up. Then the steel rod is placed in the straight-draw lease.

On skip draws, the warp is leased with harnesses Nos. 1, 3, and 5 down and 2, 4, and 6 up.

A hole is punched in each end of a 6½-in. length of leather 2 ins. wide. One hole in the leather is placed over an end of the steel rod, and the other is fastened to the front bar in the frame of the warp stop motion.

Another piece of leather of the same construction is used to hold the other end of the steel rod to the other end of the stop motion.

Another steel rod the same dimensions of the first one is leased into the warp back of the drop wires. This rod is centered between the drop wires and the whiproll.

A piece of jacquard twine is tied to the front steel rod, run through two extra drop wires on one stop-motion contact bar, and tied to the back steel rod. A rubber band fastens the back rod to the whiproll.

When the warp comes off the loom beam rolled or twisted, it pulls the first steel rod forward and slackens the jacquard twine to let the two drop wires fall down to stop the loom. As a result, the weaver can untwist the ends before they make a draw-back and break out.

If ends are leased two together in skip draws on each side of the steel rods, two pieces of jacquard twine and two banks of drop wires (two drop wires to each bank) are used to stop the loom more quickly.

Warps equipped with these easily made attachments make few draw-backs, and the cost of the attachments is small. *E. B. Hoffard, Jersey Shore, Pa.*

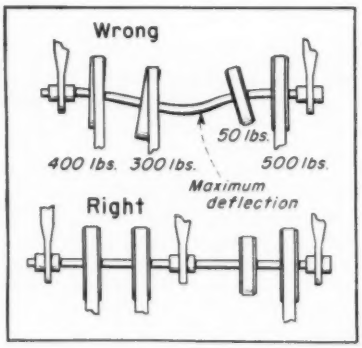
How To Keep Belts on Pulleys

When a pulley is located a great distance from a hanger, there is danger of shaft deflection. As shown in the illustration labeled Wrong, the pulley itself tilts and causes the belt to run off.

If a hanger were placed between the 300-lb. and 500-lb. pulleys, such deflection would be prevented, as shown in the illustration labeled *Right*.

In the illustration, the pulley marked 50 lbs. has a horizontal belt; but the deflection of the shaft is enough to cause the belt to become unseated.

Another cause of belts running off is overloading pulleys. The slippage of the belt on an overloaded pulley causes the unseating of the belt. *W. F. Schaphorst, Newark, N. J.*



A PULLEY tilting because of shaft deflection causes the belt to run off. Another hanger placed between the pulleys would eliminate this condition.

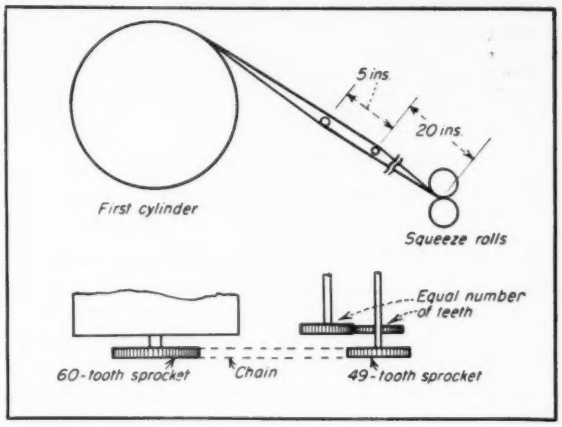
Use Acetate Yarns For Center Selvage

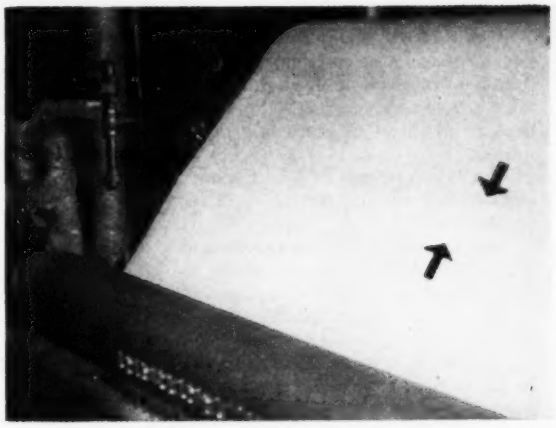
We make double-width fabrics, and we used to use a douping arrangement for the center selvage. But douping is complicated, and loom speeds cannot be high.

So we now weave a few ends of acetate yarn in our silk and rayon fabrics for a center selvage. There's no more douping, and the loom runs at full speed.

The acetate yarns are painted with a solution of acetone and dimethyl-phthalate. The acetate yarns of course dissolve and leave us with a good selvage.

We Use a Wet Split To Improve Slasher Performance





CHROME-PLATED RODS are set between the squeeze rolls and the first cylinder and are driven positively from the cylinder in the same direction as the yarn. The ¾-in. rods are cut down at the ends to run in ½-in. bearings that were on hand. Both slashing and weaving performance has been improved by this wet split.

The first split after drying used to be a rough one on our spun-rayon warps; ends would be out of the lease, shedding was high, and there were also stuck ends in the warp.

We eliminated all these troubles and also improved weave-room performance by putting in a wet split just before the first drying cylinder.

Two ¾-in. chrome-plated rods are set 5 ins. apart, and the first one is about 20 ins. from the final squeeze-roll nip. The split rods are positively driven in the same direction as the yarn but a little slower to prevent size accumulation.

The split rods are equipped with one set of bearings on the nondrive side and two sets on the drive side. The drive is from the first cylinder, which is fitted with a 60-tooth sprocket wheel, through a chain to a 49-tooth sprocket on the lower split rod. The drive to the upper rod is from the lower one through two gears with the same number of teeth to give both rods the same speed.

We feel that more size is left on our yarns now in a way that accomlishes the most protection. Both our slashers and weavers agree that warps are much better with this wet split. *Paul Stallings, Marion, N. C.*

Shuttle Tips Stay Put With This Glue Formula

Shuttle tips coming loose from the shuttle used to be a great problem with us during rainy periods.

Loose tips are normally reglued, forced back into the wooden shuttle, and dried in a conditioning room. Reglued tips always came loose, sometimes running no more than 2 hrs., and, at most, not more than two shifts.

This trouble made shuttle-repair work very costly in our mill, and our weave-room production was lowered.

On close examination, we found that the glue we were using was absorbing moisture from the humid atmosphere of the weave room. After a great deal of experimenting, we found a glue formula that makes shuttle tips stay put. The formula consists of ordinary glue (1 lb.) melted in skimmed milk (2 qts.).

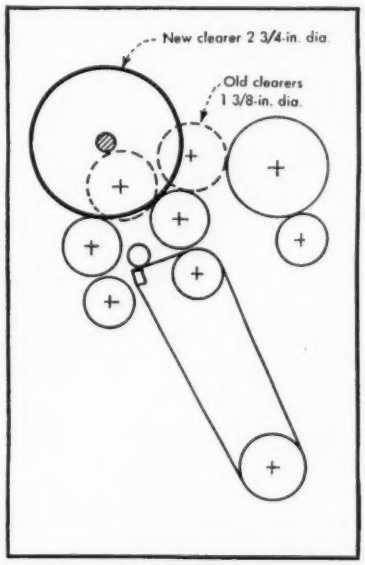
Shuttle tips fixed with this solution are not affected by moisture. The trouble from loose shuttle tips in our weave room is over, and second-quality cloth is reduced. *M. C. Dutt, India*

Larger Revolving Clearer Improves Spinning

Our Le Blan high-draft spinning frames were originally equipped with two lines of 1⅜-in. revolving clearers. These two lines were almost in contact with each other. When an end broke, the vacuum end-removal system would fail to pick up the end and the strand would cling to the front revolving clearer and build up rapidly.

When this ring became large enough, it came in contact with the second line of clearers, which stripped it off. Small pieces of cotton fell between the drafting rolls or directly on the hole in the suction tube under the front bottom roll. This waste prevented the vacuum system from working properly; and unless the break was pieced quickly, there was a snowstorm in a short time.

To remedy this situation, we now use one line of revolving clearers of 2¾-in. dia. (twice the size of the original clearers). This change has given good results in keeping the top rolls clean, reducing end breakage, and eliminating the trouble of lapping. *M. F. Douville, Rouen, France.*



DOUBLE-SIZE CLEARER replaced two smaller ones to keep spinning top rolls cleaner, reduce end breakage, and eliminate lapping on second line of clearers.

Here's a Quick Way To Get Nep Counts

If you use the USDA mechanical fiber blender, you can make six nep counts on one sample in 30 mins. Besides, you can use this method to check neps at all stages of processing up to spinning.

The procedure can be used to check neps in raw cotton, waste, sliver, or roving.

Take a five-gram random sample and run it through the blender twice to form a smooth bat. (Sliver and roving need only one pass because they're already partially parallel.)

The feed plate of the blender should be set 0.05 in. above the cylinder instead of the normal $\frac{1}{8}$ in. The narrower setting helps to form a smooth bat with less handling; and handling causes neps.

Lay the bat out and divide it into eight equal lengthwise strips. Discard the ends because they are more likely to be uneven.

Run each of the six middle sections through the blender, and take a portion of each web off on a suitable nep-counting board.

Count the neps in each sample, and weigh each sample to the nearest 0.5 milligram.

To determine neps per gram, divide the number of neps by the gram weight times 15.4.

Tests have shown that the blender does not make enough neps to affect results and that results by this method correlate with those obtained on the card web in the conventional manner.

Results will vary from mill to mill, but one set of tests indicated that processing more than doubled the neps in raw cotton. Carding and roving make the most neps. Combing removes many neps, but drawing and roving again increase the number. *P. L. Orcutt and H. Wakeham, Textile Research Institute*

Best-Kink Award for August

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

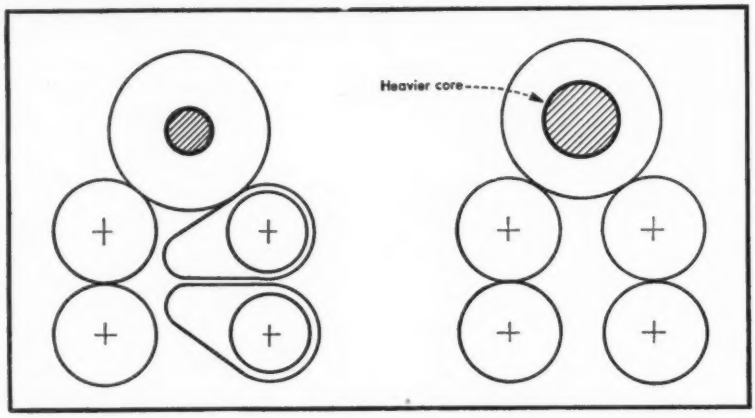
The best Kink for August, according to TEXTILE WORLD reader-judges, was:

"Whiproll Setup Stopped Wavy Cloth"

By C. M. Whitcher, Midland, Ont.

Mr. Whitcher is being sent a check for $25 with the compliments of TEXTILE WORLD.

Heavier Clearers Reduce Roving Ends Down



HEAVIER CORES in roving-frame clearer rolls add to the weight and improve clearer efficiency. The front clearer now weighs 12 oz. and the back clearer 19 oz.

The original revolving clearers on our high-draft Casablancas two-zone roving frames were too light to do a real cleaning job. The original weight for a two-boss clearer was 6 oz. End breakage in roving was high, and strands frequently clung to the third top roll.

We didn't change the diameters of our revolving clearers to overcome this trouble but simply inserted heavier metal cores in the center of each roll. The clearers now stay in closer, more-constant contact with the top rolls. The difference in surface speeds of the top rolls in contact with the clearer rolls gives a much better cleaning job and has helped to reduce end breakage and improve frame efficiency.

Our weights for a two-boss roll are now:

Front clearer—12 oz.
Back clearer—19 oz.

M. F. Douville, Rouen, France

Source of Faulty Cloth Is Quickly Checked

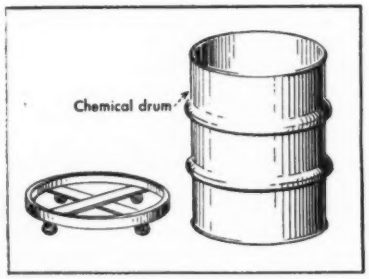
So that we can easily trace our rolls of cloth back to the knitter, we have assigned a number to each knitter. Each knitter is provided with a writing tube, and he marks each roll with his number and the number of the machine the roll came from.

The marks are indelible, and our quality-control man can rapidly check the source of faulty cloth. *Leonard Mauer, Ft. Meade, Md.*

Dolly Eases Handling of Chemicals

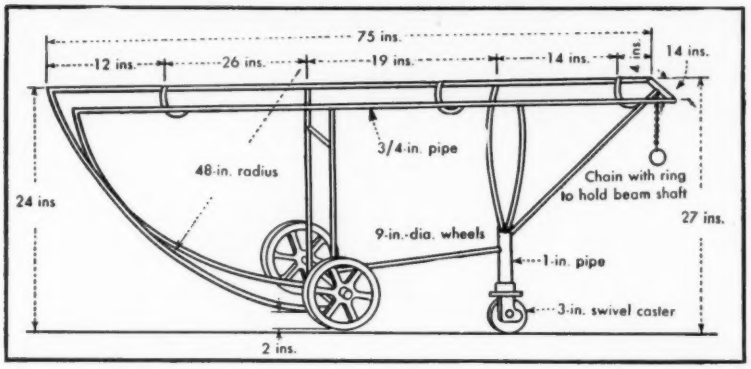
Handling chemicals stored in drums in our dyehouse has been made much easier since we made dollies for the drums.

We made the dollies from 2x$\frac{1}{4}$-in. steel, barrel bands, and casters. Two lengths of steel are welded to form a cross, and the band is welded to the cross . The casters are screwed to the points of the cross. *Dan Singer, Newton, Mass.*



DOLLY made as shown here makes handling chemical drums easier.

This Truck Helps in Doffing Beams at Slashers



CRADLE-TYPE TRUCK is made from ¾-in. pipe welded together. It is so delicately balanced that one man can unload a loom beam from it with one hand.

Doffing loom beams at our slashers used to be hard work. Now, it is easy because we have made a truck to take the heavy lifting out of the job.

The truck is, in effect, a large cradle because it gently rocks or dumps a full loom beam off one end. It is constructed of ¾-in. pipe welded together. It has two wheels of 9-in. dia. and a 3-in. caster. The caster is located toward the rear of the truck so that the truck can be pushed easily around corners.

Beams are doffed this way:

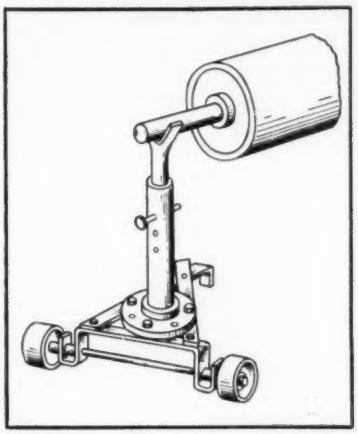
The slasher tender lifts the loom beam from the slasher with an overhead hoist, pulls the beam about 3 ft. out from the slasher, and lowers it to the truck. Then he takes an empty loom beam from another similar truck rolled between the full beam and the slasher and lifts it to the slasher with the hoist. Then the slasher is restarted.

The full warp is rolled to a storage area in the slasher room where rows of 1½-in. pipe are fastened 8 ins. apart with U-stands. The curved end of the truck straddles the U-stand, and the slasher tender tilts the truck on end. A chain with a ring in the end fastened over the beam journal keeps the beam from dumping before it is in a vertical position.

The truck is balanced so perfectly that the slasher tender can unload the beam with one hand. After the beam is set in the U-stand, it is pushed down the stand next to another stored beam.

By removing the heavy physical work commonly associated with slashing, we are able to employ slasher tenders with many years of valuable experience when they normally would not be able to do the heavy physical labor. *E. L. Shaw, Calhoun Falls, S. C.*

Portable Support Stand



HEAVY-DUTY, portable three-legged stand for supporting rolls, shafts, or bars can be made from materials generally found at most mills. The materials include flanges, steel pipe or tube, pulleys, flat bar stock, and a few bolts and rivets. *Chas H. Willey, Penacook, N. H.*

Pass Nylon Fabrics Through Steam To Give Better Set

We improved our knitted nylon cloth by passing the cloth through superheated steam during finishing. The cloth was then dried in hot air.

As the cloth came through the final roll on the finisher, it was spread in layers and not rolled. We found this treatment gave a better set to our fabrics. *L. Mauer, Fort Meade, Md.*

Stop Drag-ins in Cloth With This Attachment

When we weave narrow styles of cloth on our C&K W-3 and C-4 looms, we always have a lot of drag-ins soon after the bobbins of filling transfer. The filling-end holder takes care of the filling end from the new bobbin, but the filling from the transferred bobbin often gets in the path of the shuttle and is pulled into the cloth. Even when the waste end can be burled out of the cloth, burling costs are high.

We have made a simple little attachment to reduce the number of drag-ins.

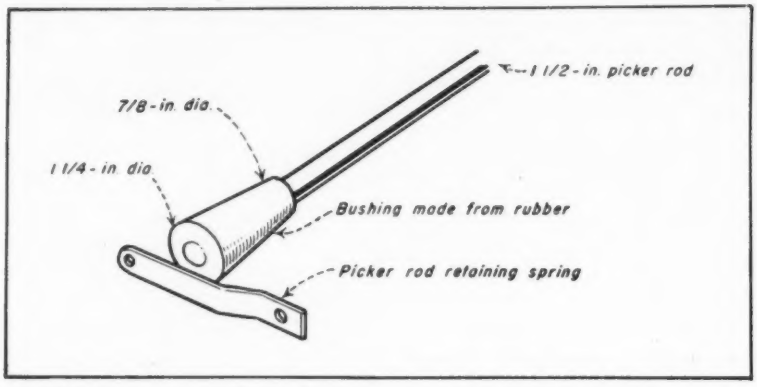
FILLING ENDS hang on the card clothing and do not weave into the cloth as drag-ins.

A 7/16-in. hole is bored near one end of a 6-in. length of ⅛x1½-in. strap iron. The iron is bent to a 90° angle near the hole, and the rest of the iron is bent to form an arc. Two ⅛-in. holes are bored in the curved surface, and a piece of card clothing is riveted to the two holes in the iron. The iron is bolted to the lay under the mouth of the lay-end plate on the drive end of the loom.

When a filling end transfers, it sticks to the card clothing and is held firm. Our weavers clean the ends off the card clothing at the beginning of each shift.

Since we have been using these attachments, the quality of our cloth is much higher because we have practically eliminated defects caused by jerked-in filling.

Rubber Bumper Makes Picker-Rod Bushing



REPAIR BUSHING for the picker rod is made from a piece of an old picker-rod bumper. The section of bumper is ground on a sanding wheel to the same general shape as a cork bottle stopper.

Sometimes the picker-rod bushings come loose in the picker-rod stands on C&K S-6 looms, and the threads in the stands wear out because the bushings are hardened and the stands aren't.

When this happens, the stand has to be replaced.

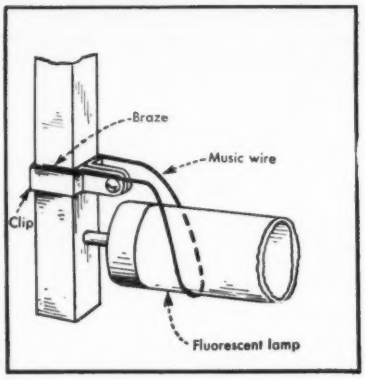
We got to thinking about this problem recently and came up with an idea that keeps us from having to replace the stands. We bored a ½-in. hole in an old rubber picker-rod bumper and cut out a square section around the hole with a hack saw.

We stuck the square rubber block on the end of a picker rod. Then we ground the block on a sanding wheel to the shape of a cork stopper. The outside end of the block was ground to 1¼-in. dia., and the inside end was cut to ⅞-in. dia.

The bushing that resulted made a perfect temporary replacement for the steel bushing because it took all the lost motion out of the worn surface of the stand.

We made several rubber bushings of this type and use them for temporary repairs. When a warp runs out on a loom repaired this way, we replace the picker-rod stand in our general check-up. *Charles R. Batzer, Lancaster, Pa.*

Music Wire Prevents Light Tube From Falling

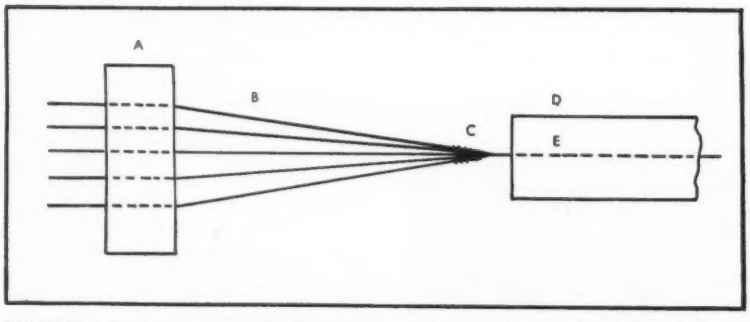


GUARD is easily made and insures protection against the falling of fluorescent lamps.

The danger of a fluorescent lamp slipping from its fixture and causing injury can be prevented by a music-wire guard mounted on the fixture. The diagram illustrates this easy-to-make device, which consists of a clip attached to the post by a nut and bolt and a loop of music wire brazed to the clip. If a large number are to be produced, a few simple jigs can be used to speed their production.

The installation cost is practically nothing since the man who changes the lamps can carry a supply of the guards in his pockets as he mounts the ladder for lamp replacement. When a new lamp is needed, the loop is flexed back and the lamp is replaced. The guard is good for the life of the fixture. *P. C. Ziemke, Oak Ridge, Tenn.*

Here's an Easy Way To Draw Wires Into a Conduit



WIRES *B* to be drawn into conduit *D* are first passed through spreader *A*. Draw wire *E* is placed among the wires, which are then bound together with a fine steel wire *C*. The joint is painted with molten solder flux containing solder filings and then heated to form a strong, flexible connection.

When several wires are drawn into a conduit, they frequently become twisted. The twisting, which makes it difficult to pull the wires through the conduit, can be eliminated with a simple wooden-spreader technique.

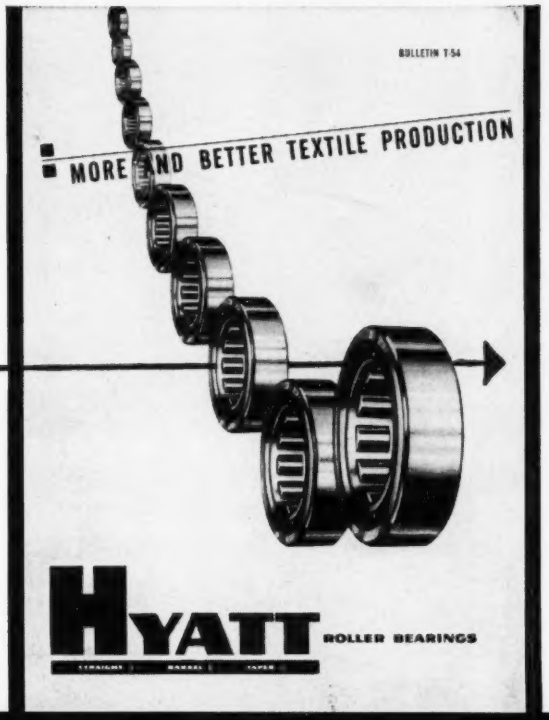
To use this method, pass the wires to be placed in the conduit through a spreader made of a piece of soft wood drilled with a series of holes large enough to accommodate the wires. The position of the holes in the spreader should be the same as the desired position of the wires in the conduit.

Strip a 3-in. length of the wire ends, and paint the bared ends with molten solder flux to which fine solder filings have been added. Enclose a draw wire among the wires, and join the ends of the main wires by binding them with a fine steel wire. Secure the ends of the binding wire by soldering them to the main wires.

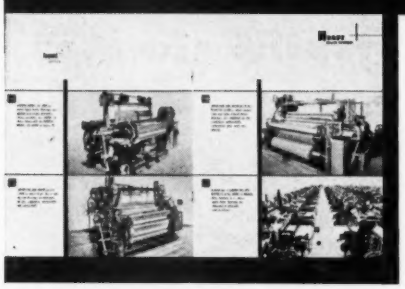
Heat the joint with a torch. The solder filings will soon melt and produce a strong but flexible joint, and the wire binding will prevent the solder from running out.

To reduce friction as the wires are drawn into the conduit, paint the outside of the joint with a mixture of French chalk and gasoline. *W. E. Warner, Essex, England*

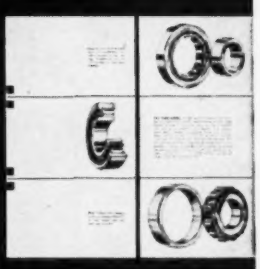
Announcing

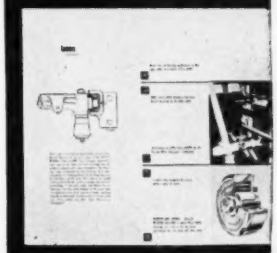


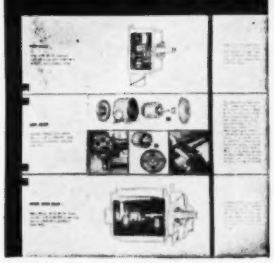
the new Hyatt roller bearing textile bulletin...



"MORE AND BETTER TEXTILE PRODUCTION"







This 36-page booklet illustrates the latest uses of roller bearings in textile equipment. It shows where and how you can apply roller bearings to increase your mill production.

It shows how roller bearings are used:

IN CARDING EQUIPMENT—to help maintain cylinder and lickerin settings; to permit smooth rotation of the workers and strippers.

IN DRAWING AND ROVING FRAMES—to prevent top rolls from binding; to permit ease of operation of back weight sheaves and lifter arms.

IN TWISTING AND SPINNING FRAMES—to get smoother cylinder operation; to allow for greater spindle speeds and package sizes.

IN LOOMS—to prevent wear of principal shafts; to eliminate oil splatter; and to decrease loom power requirements.

IN FINISHING EQUIPMENT—to retain bearing lubricants at all temperatures; to prevent oil damage to finished fabrics.

IN MOTORS—to prolong motor life; to maintain the gap between rotor and stator.

All of these applications—and many others covered in the bulletin—can help you get "more and better textile production".

Requests for this new textile bulletin should be addressed to Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

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The OK BRAND name is your assurance of textile starches of highest quality, perfect uniformity, and absolute dependability. Enjoy the advantages of these fine textile starches tailor-made to your manufacturing requirements. You'll profit from improved sizing, finishing, and printing operations with OK BRAND . . . because top-quality OK BRAND costs no more.

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y OCTOBER, 1954

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NO REPEATS . . . Listed here for October are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Uptwister—Maximum spindle speed is 16,000 rpm. The twist range is 4½ to 80 tpi. Delivery and take-up packages are 24 to 32 oz. Universal Winding Co. (F-1)

Twist setter—Electric heaters enable high temperatures to be reached. Exhaust system helps air conditioning and cools material before unloading. Lydon Bros. (F-2)

Warp-tying machine—Ties striped warps. Faults are detected and machine is automatically stopped. The machine is used for cotton, worsted, and woolen warps. Edda International Corp. (F-3)

Automatic quill winders—For parallel wind and cross wind. The traverse is up to 5½ ins. Spindle speed is up to 6,000 rpm. on parallel winds. Plutte, Koecke & Co. (F-4)

Slasher dryer—Air is heated by three double-row steam coils. The 5- and 7-ft. cylinders are for steam pressures up to 22 psi. West Point Foundry & Machine Co. (F-5)

Weft straighteners—Swinging rolls pivot at the cloth selvage for quicker correction. Spring-mounted tension roll with limit switch prevents slack selvages in correcting skew. Mount Hope Machinery Co. (F-6)

Wool and worsted dyeing machines—Raw-stock dyeing machines have 500-lb. capacity. Package-dyeing machines allow dye batches of 1,500 lbs. with the hook-up system. Standard Fabricators, Inc. (F-7)

Semidecating machine—Machine capacity is 50 to 60 pieces in 8 hrs. Vacuum syphon eliminates condensed steam. Decating cylinders are 12-, 14-, or 16-in. dia. Mawaco Machine Co. (F-8)

Textile machinery for finishing plants—High-speed tenter frames have speeds up to 250 yds. per min. A 100-in.-long tenterette has hinged rails. Marshall & Williams Corp. (F-9)

Pneumatic mangle—For extraction, resin application, dyeing, and starching. Fabric speeds up to 160 yds. per min. Four rolls arranged to give three nips. Rodney Hunt Machine Co. (F-10)

AUXILIARY EQUIPMENT

Textile-testing optical instrument—For testing yarns, fabrics, and fibers. Microscopic magnifications are from 50 to 1,500 with 7-in.-dia. screens. Alfred Hofmann Needle Works, Inc. (F-11)

Packaging machine—Fitted with electric eye for registering printed material. Adjustable for packages from 4x4x¼ ins. to 12x8x3 ins. Package Machinery Co. (F-12)

Trucks—Two-wheel trucks for handling cartons, boxes, cases, bales, crates, barrels, kegs, and sacks. Platform trucks are steel framed, with swivel casters and oak decks. Fairbanks Co. (F-13)

Polarizing microscopes—With rack-and-pinion coarse adjustment and a fine adjustment graduated in one-micron divisions. Bausch & Lomb Optical Co. (F-14)

Dust collector—Has expanded metal-screen cylinder, central tube, a tubular arm that supplies air to blow tube, and a scraper arm. Turner & Haws Engineering Co., Inc. (F-15)

Double-apron drafting mechanism—Each top roller is individually pendulum guided and loaded. All drafting fields are adjustable. Suitable for new spinning frames or conversions. Lenkotex Co., Inc. (F-16)

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Reader Service (Continued)

Fabric guider—Uses compressed air. Speed adjustments from 50 to 400 yds. per min. Lightweight fabrics to heavy duck can be handled. Guider Specialty Co. (F-17)

Portable elevating dumping machine—For spooler-bobbin loading. Three pouring operations have been eliminated, with 12% less damaged yarn. Saves one man's work and handles more bobbins. Sunray Co. (F-18)

Loom cleaner—Passes over each loom every 5 to 10 mins. Delivers air currents to arch, harnesses, drop wires, stop motions, transfer motions, and fabric. Parks-Cramer Co. (F-19)

Electric power drives—Eliminates line shafting; not affected by loom vibration. Knitting production increased 15%, power costs cut 12%, and maintenance reduced 45%. Sterling Electric Motors, Inc. (F-20)

SUPPLIES & CHEMICALS

Rawhide loom pickers—Molded rawhide reinforcements at the stick hole cut down wear. The spindle hole is perfectly rounded and strengthened. Garland Manufacturing Co. (F-21)

Textile roll coverings and mill supplies—Electrolyte in rubber composition neutralizes electric charges in moisture layer on cot. Aprons are used for eight years. Armstrong Cork Co. (F-22)

Valves—Gas valves have tight seals. Gate valves have two-piece union bonnet. Reinforced body resists distortion. Fairbanks Co. (F-23)

Steel unions—Polygonal pipe ends are for easy installation and are zinc plated to resist rust. Strong shoulders resist wrench abuse. Clean-cut threads do not strip. Dart Union Co. (F-24)

Loom lubrication—Special oil stays on bearings and lubricates steadily instead of dripping and throwing off. Oil stains on cloth are eliminated. New York & New Jersey Lubricant Co. (F-25)

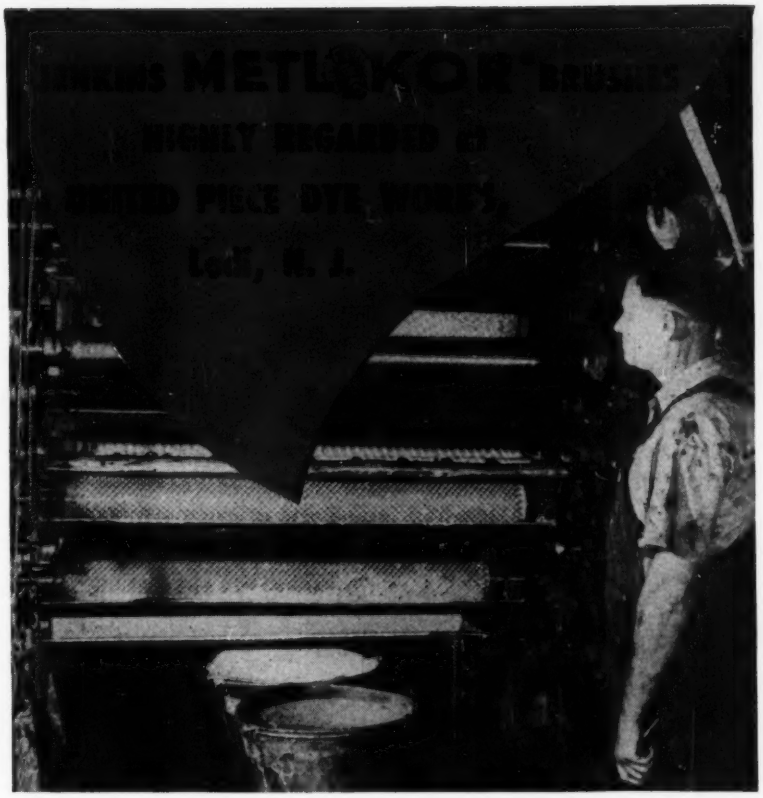
Industrial rolls—For embossing and applying lacquers, plastics, adhesives, and waxes. Rolls have accurate diameters and ground finish. Paper Machinery & Research, Inc. (F-26)

Waxes—Characteristics of beeswax, carnauba, wax-durex resin blends, candelilla, ceresine, japan, montan, ozokenite, palm, and spermacetti wax are described. Frank B. Ross Co., Inc. (F-27)

Textile chemicals—Technical bulletins on caustic soda, soda ash, calcium chloride, liquid chlorine, chlorine bleach solutions, and calcium chloride. Allied Chemical & Dye Corp. (F-28)

Nitrile rubber lattices—Improve abrasion resistance on cotton warps and color uniformity in synthetic blends. Give crease resistance to rayon and cotton. B. F. Goodrich Chemical Co. (F-29)

Organic chelating agents—For chemical control of cations. Used in the

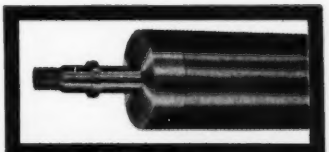


Mr. M. K. Emerson, U.P.D. vice-president in charge of printing, says they "are more than happy" with the Jenkins METLKOR Brushes which replaced other types of applicator rolls and brushes formerly used. And Frank Du Bois adds: "In any case, we wouldn't go back to the older type, less efficient brushes for anything in the world."

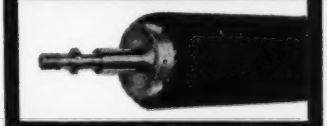
Such commendations from men who know, who demand the best brushes for a given job, is further assurance that you, too, can be certain of getting *the best brush for every textile brushing application* from Jenkins.

Our engineering services are available for analysis of your brush problems without charge or obligation.

Write or telephone your brush requirements.



The new METLKOR has stainless steel end plugs, is lighter, more corrosion-resistant. The stainless steel gudgeons and aluminum tubing are still retained.



This Nylon-filled Jenkins METLKOR furnisher brush shows the new and improved bronze end ring and stainless steel end plug.

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- for permanence of fungicides, fire-proofing, moth-proofing and other finishing agents.
- and other deteriorating effects of light and laundering.

More is required of modern fabrics than ever before if they are to stand up in competition today. The Atlas Fade-Ometer and Launder-Ometer will give you dependable test results in a minimum of time and at minimum cost.

Write for information on the new Atlas Scorch Tester for testing damage due to chlorine retention.

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Reader Service (Continued)

woolen industry with detergents and in caustic solutions in kier boiling and mercerizing of cotton. Bersworth Chemical Co. (F-30)

MAINTENANCE & ENGINEERING

Chemical porcelain—For valves, plug cocks, pipe, rolls, and fittings. Inert to the action of most chemicals and free of uncombined iron. Lap Insulator Co., Inc. (F-31)

Instrument cabinets and panels—Two, four, and six 12-in. instrument capacity. Independent of wall space and mounted in dust-tight enclosure. Foxboro Co. (F-32)

Rotary unions—Ball-bearing construction reduces friction drag and power consumption. Seal is made by two parallel, optically flat, lapped surfaces. Perfecting Service Co. (F-33)

Heat-exchanger tubes—Made of aluminum to resist corrosion. Tolerance is 0.004 in. on 1.5-in. tubes. Aluminum Co. of America (F-34)

Lubricated plug valves—Full-port and venturi types are up to 14 ins. Dual-seating check valve gives positive lubricant shut-off. Homestead Valve Mfg. Co. (F-35)

Lubricants for textile uses—For spindles, motors, card grinders, slashers, knitting machines, looms, top saddles, and comb boxes. Fiske Brothers Refining Co. (F-36)

Quick-seal coupling—Coupling is made tighter as internal pressure increases. Full swiveling action prevents hose twisting and kinking. No restrictions reduce flow. Titeflex, Inc. (F-37)

Unit heaters—For steam or hot water. Operation is quiet, louvers are adjustable. Prevents stratification of heat at the ceiling. American Blower Corp. (F-38)

Air-operated controllers—For automatic control of temperature, flow, pressure, vacuum, draft, absolute pressure, liquid level, humidity, pH, and electrical values. Bristol Co. (F-39)

Protective coatings—For metal, concrete, and masonry. No primer is needed. Six basic coatings, including corrosion-resistant, are supplied. Koppers Co., Inc. (F-40)

GENERAL

Underwear yarns—Dynel provides warmth with little weight; wet and dry strength, washability, quick drying, stain resistance, and shape retention. Carbide & Carbon Chemicals Co. (F-41)

Fluorescent-lamp disposal unit—Also takes care of bottles up to 3¾-in. dia. Takes about 1 sq. ft. of floor space when not in use. Laduby Co., Inc. (F-42)

Luminous ceilings—Lowered ceiling hides pipes, sprinklers, and ducts. Entire ceiling illuminated. No glare or

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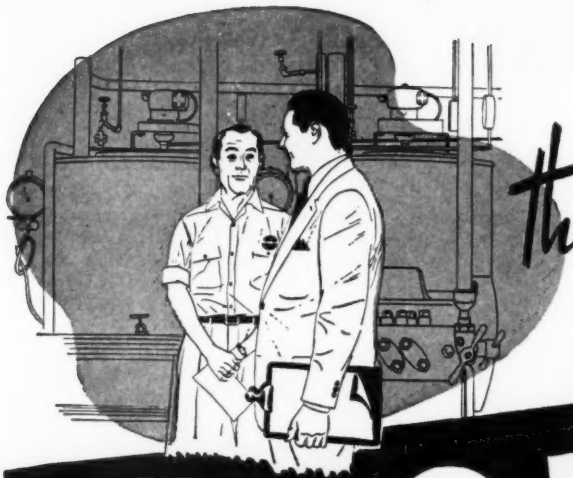
Mill Maintenance

An Easy Way To Recharge Damaged Battery Cells

Users of battery-powered industrial equipment such as fork-lift trucks and power-operated floor trucks are sometimes faced with the problem of repairing and recharging damaged battery cells. Field service engineers of Gould-National Batteries, Inc., have found that it is of utmost importance to recharge a repaired cell properly before putting it back in service.

Give the Cells Extra Charges

The best method requires separate charging equipment to give the repaired cell the extra charge that it will need to restore it to operating condition. If the cell has been allowed to dry out because of loss of electrolyte, the cell needs a prolonged charge at the finish rate. In other words, a cell rated at 400 amp-hrs., which has dried out considerably, might require 1,200 amp-hrs. of charge. There-



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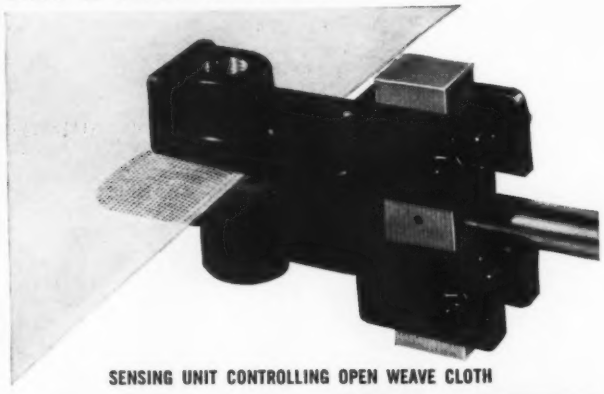
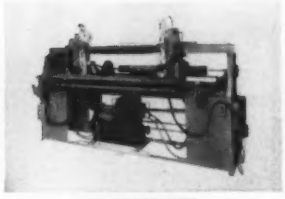


SENSING UNIT CONTROLLING OPEN WEAVE CLOTH



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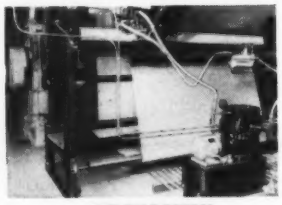

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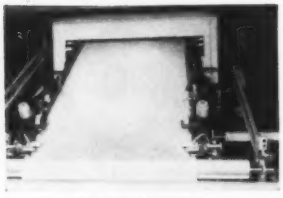

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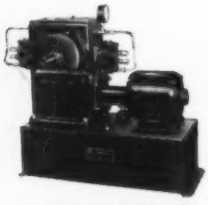

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The Askania Cloth Guide Control has been tested on hundreds of applications—it's extremely fast, accurate and dependable. It guides fast moving webs with a breath of air. It's an ideal unit to solve your cloth guiding problems on Tenter Frames, Tubing Machines, Folding Machines, Examining Machines, Printing Machines, Slitting Machines, Labeling Machines or Rewinding Machines. Askania Cloth Guide Controls are establishing new standards in the finishing departments of hundreds of Textile Mills. If you have a cloth guiding problem—ask for Bulletin A-161, or call Askania engineers for full details.

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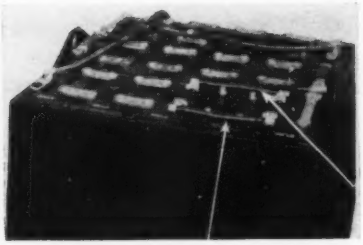

FIG. 1. In this 15-cell battery, cable jumpers with automotive-type clamps are used to cut the repaired cell (second from right in front row) out of the circuit while the battery is in service in a truck during working hours.

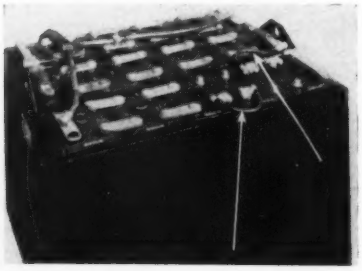

FIG. 2—During normal charging of the battery, the jumpers are connected to the repaired cell so that the repaired cell receives the normal charge when the entire battery is charged. A damaged and repaired cell should receive at least two charging cycles before the jumpers are removed and the cell is permanently connected back into the battery circuit.

fore, damaged cells should be repaired as quickly as the damage is discovered to eliminate this necessity for excessive charging and to get the battery back in service quickly.

The amount of charge can be determined by taking a reading of voltage and specific gravity at the end of the normal charge. Four-hour readings should follow. If the readings remain constant, the cell can be returned to normal duty. If the readings vary, additional charging at the finish rate should be given until the readings remain constant for 4 hrs.

A badly damaged or shorted cell should be discarded if it does not give constant reading of voltage and specific gravity over a 4-hr. period after repeated efforts.

In all cases, the specific gravity of the repaired cell must be adjusted to the proper value after the cell has been recharged.

Use Regular Chargers

In many plants it is not possible to arrange for special charging. Where only the regular charger is available for both normal and repaired bat-

For more information, write direct or use Reader Service post card.

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DURAWELD SHUTTLE

. . . has been used successfully for years by leading mills everywhere and is no longer considered experimental.

Its added and consistent weight provides a shuttle 10% heavier than the usual dogwood or fibre covered shuttle, thus reducing "Throwing out" and the consequent breakage due to this action.

Duraweld . . . is Southern's trade name for shuttles made with dogwood centers having one or two sides of *Stehide* or *Compreg*. The two materials become an inseparable unit through an unusual action of molecular adhesion.

Stehide . . . is Southern's trade name for high density phenolic impregnated cloth laminate.

Compreg . . . is Southern's trade name for high density impregnated wood laminate. The Duraweld construction is applicable to all types of shuttles and provides—

Greatly strengthened side walls . . . Elimination of wood defects . . . Will not heat up . . . Use of less loom power due to greater weight . . . Resists splitting . . . Moisture proof in side walls. All of these plus many more advantages make the cost of Duraweld less over a period of time.

Consult your nearest Southern Shuttle Field Engineer for the information you require.

SOUTHERN SHUTTLES

A DIVISION OF **STEEL HEDDLE MFG. CO.**

PARIS, GREENVILLE, S. C.

It's Southern for Service and Delivery

TEMPERED
TRADE MARK REG.

2-0-2

Lightweight Vise that's also a Work Bench...it's RIDGID Tristand

...with built-in folding tray

Stand and tray are all one unit—no loose parts. Quick easy set-up and take down. Extra-light weight but strong, rigid. Full size vise base—3 benders, ceiling brace screw, pipe rest, lots of tool slots. An unbeatable value—see it at your Supply House!

Tray pushes up easily to fold Tristand, pushes down easily to set up. Holds stand rigid.

Folds up for easy carrying to job and it's extra lightweight.

The Ridge Tool Company • Elyria, Ohio, U. S. A.

RIDGID
Work-Saver Pipe Tools

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teries, the repaired cell can be suitably charged by cutting the cell out of the circuit during operation of the equipment (Fig. 1) and putting it back in during charging (Fig. 2).

As an example, a repaired cell would be placed in the battery but not connected into the circuit while the truck is in service. When the entire battery is recharged, the cell is connected into the circuit. This procedure should be used for at least two charging cycles to allow the repaired cell to gain the additional charge required after repair.

To do this, two 18-in. jumpers made of No. 4 rubber-covered cable can be used with automotive-type clamp terminals soldered on each end. The posts of the repaired cell and the adjoining cells must be built up to fit the terminals.

Metallizing Take-Up Rolls

CONTINUED FROM PAGE 120

rolls are on the floor. When a roll is placed in a lathe, the nails in the wooden plugs of the rolls used to hold the tin fillet are driven flush with the surface of the plugs. The roll is wiped clean with a dry cloth, and the roll is centered in the lathe.

Emery Cloth Cleans the Roll

A strip of No. 40-grit emery cloth 2 ins. wide is passed around the roll with the grit surface next to the roll, and the ends are fastened to the lathe tool carriage. The lathe is started, and the emery polishes the surface to remove rust and lint. An X-type knurling tool with five blades is run across the roll once to knurl the surface.

The take-up roll is placed in another lathe set aside for metallizing. A protective hood, completely covering the back and bottom working surface of the lathe, has an adjustable front that covers most of the top of the take-up roll after it is placed in the lathe; and a 16-in. exhaust pipe leading from the hood to the outside of the machine shop exhausts metallizing fumes by a fan driven by a ¾-hp. motor.

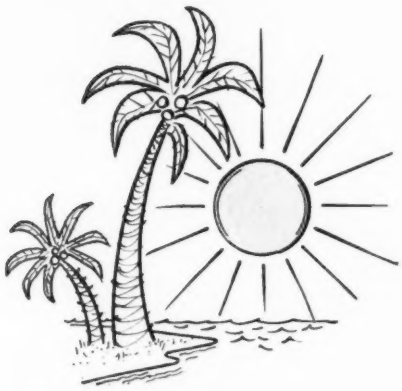
The take-up roll is given one coat of No. 80 ⅛-in. carbon wire and one coat of No. 2 alloy stainless steel.

The pressure for air and oxygen are controlled by gauges. Air pressure for ⅛-in. carbon wire is 65 psi.-ga. and oxygen is 39. Acetylene is manufactured in a nearby room.

Flow Meter Gives Best Results

A gas flow meter is used to control the metallizing fuel so that a uniform deposit of metal is put on the roll. Dwight's Master Mechanic Hoyt Wiggington gives the flow meter

A summer's worth of broiling sun...



can't fade the superfast colors of

Coloray®

COURTAULDS' NEW RAYON FIBER WITH CAPTIVE COLOR

MOST HOT NEWS COOLS OFF. But not the hot news reporting Coloray's astonishing colorfastness. Think of it! Most Coloray colors simply wouldn't fade—after 320 hours of exposure under glass in broiling tropical sunlight.

Superfast Coloray colors rate Class L8—highest mark for colorfastness—four times the colorfastness claimed for other "colorfast" colors. Even under direct exposure to sun and weather, not one Coloray color rated below Class L6, the normal standard. And Courtaulds had the South Florida tests run *twice*... to *double-prove* these sensational ratings.

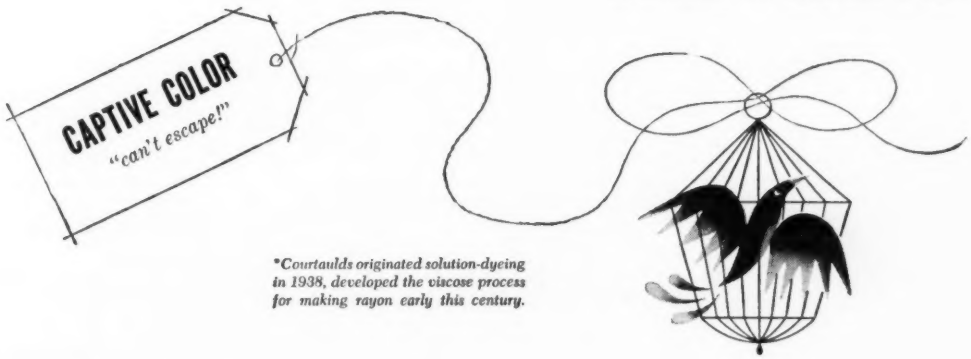
Two new colors, Turquoise and Slate Gray, were added to the Coloray range while these tests were being conducted

All Coloray colors offer outstanding fastness all around—to sunlight, washing, perspiration, cleaning. Color is caged inside this amazing fiber via Courtaulds' revolutionary method of solution dyeing.* A great advance in colorfastness. A great advantage for ready-to-wear, piece goods, home furnishings, industrial items.

Top names in varied fields are featuring Coloray this Fall. McGregor... in sport shirts. Stehli... in high-fashion fabrics. Ford . . .in never-fading convertible tops of 100% colorfast Coloray Black.

Put *your* name down for Coloray business next season!

Coloray and white rayon staple are produced in Courtaulds' new plant at LeMoyne, Alabama. 15 basic colors are available in these deniers and staple lengths: 1½ denier—1⅞" staple, 3 denier—2" staple.



**Courtaulds originated solution-dyeing in 1938, developed the viscose process for making rayon early this century.*

For further information write: Fabric Development Dept.

COURTAULDS *first name in man-made fibers, first name in solution-dyeing*

(Alabama) Inc., 600 FIFTH AVENUE, NEW YORK 20 • Greensboro, N. C. • Le Moyne, Alabama

HOW MUCH NICKEL IS THERE IN A FIVE-CENT PIECE?

An interesting question, for sure. But not the kind of question we're concerned with. Due to the special nature of our work . . . CORN PRODUCTS RESEARCH . . . only those inquiries involving CORN'S uses can be placed on our agenda.

If you have a question like "How can we best apply this dextrine to our needs?" or "What can be done with starch to cut costs here or here?" or any other inquiry relating to the adaption of products from corn to your manufacturing process, contact us! All research and laboratory facilities of the Anheuser-Busch Corn Products Research Section will be placed at the disposal of your particular problem, without charge.

Why? . . . because Anheuser-Busch, Inc., is vitally concerned with the future research and development of corn derivatives and their application to daily life.

Address all inquiries to:

ANHEUSER-BUSCH, INC.
CORN PRODUCTS DEPARTMENT
ST. LOUIS, MO.

CORN STARCHES • GUMS • DEXTRINES

credit for the successful results from the metallized rolls. With the meter, the carbon and stainless steel are put on the rolls so smoothly and accurately that the cloth pulls over the rolls uniformly at the looms.

The operator of the metallizing process starts the machine operating, and then he steps back about 3 ft. to be away from the flame and fumes and carefully watches the work from that distance.

The looms at Dwight are Draper X, X-2, and XP models in widths of 36, 40, 46, 54, and 60 ins. Cotton sheetings, drills, twills, sateens, and other fabrics are woven.

Advantages of the metallized rolls as pointed out by Dwight's Superintendent Charles H. Moody are:

1. Cloth does not slip on the rolls.
2. The rolls do not rust during vacation shutdowns.
3. There's practically no maintenance after the rolls are metallized.

Cotton-Card Efficiency

CONTINUED FROM PAGE 109

on the same card before stripping, you would find that the weight of strips, expressed in percentage figures, would be reduced to about 3%; and if 48 lbs. were produced, the strip weight would fall to around 2%.

If you analyzed the cylinder strips for trash content with the Shirley Analyzer, you would find that the percentage of trash in the strips increases as the strippings are spaced further apart. A typical analysis of card strips for trash content of the three stripping cycles mentioned could be:

After 12 lbs. production—12% trash
After 24 lbs. production—15% trash
After 48 lbs. production—18% trash

It looks at first sight as though the best thing to do is to space strippings further apart. But if the total amount of trash extracted is considered, the picture is different:

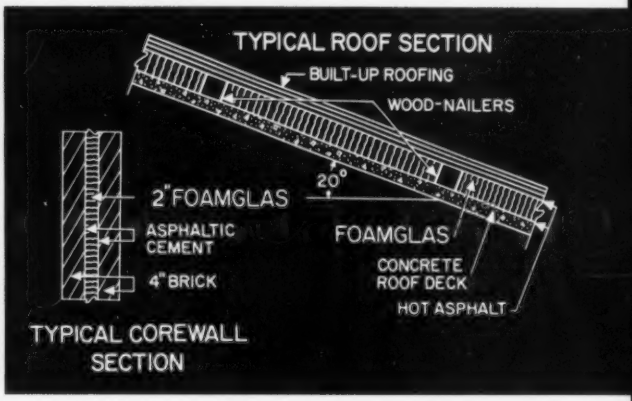
12% of 4% of 12 lbs. = 0.0576 lbs.
15% of 3% of 24 lbs. = 0.1080 lbs.
18% of 2% of 48 lbs. = 0.1728 lbs.

To get comparative figures based on 48 lbs. of card production, multiply trash extracted in the first case by four and in the second by two. Comparative figures are 0.2304, 0.2160, and 0.1728 lbs; so the most trash is extracted by the closer-spaced strippings.

You can also expect a higher trash content in the flat strips of slow-moving card flats as compared with faster-moving flats, but increasing the speed of the flats gives a higher percentage of trash extracted according to the weight of sliver produced.

Experience has shown that the

At left, FOAMGLAS was embedded in hot bitumen between wood nailing strips anchored to concrete deck. Roofing felts were laid parallel with roof slope. Above, workman applies FOAMGLAS with mastic to exterior wall in corewall construction at Augusta mill.



Bates Manufacturing Company, Lewiston, Maine, reports

"We've used and re-used FOAMGLAS because it stays dry for dependable insulating performance"

"We discovered in 1944 that the organic insulation then in place on sawtooth roof monitors at our Lewiston, Maine, mill had failed," reports Bates Manufacturing Company. "Moisture absorption had destroyed its insulating efficiency. We replaced the old insulation with FOAMGLAS because its sealed glass cells are waterproof. We knew insulation that stays dry could be depended on for long-lasting insulating performance. We have had no moisture absorption problem since then . . . and insulation maintenance and replacement have been virtually eliminated. We discovered, too, that the light weight and high strength of FOAMGLAS made it easy for us to secure a satisfactory application on the sloping roof monitors."

Bates' report continues: "Because of its excellent seven-year performance record at Lewiston, FOAMGLAS was used again in 1951 to insulate core walls of a new weave room at our Edwards Division mill in Augusta, Maine. Here again, dependable insulating efficiency was most important . . . to help us maintain constant temperature (70°) and humidity (65%) in the weave room. In a climate where winter temperatures often remain at 10° F., we depend on the sealed cells of FOAMGLAS to guard us against damaging insulation failure."

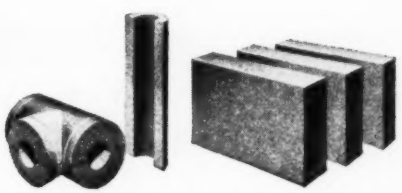
Why not follow the lead of Bates and other leaders in the textile industry? Take advantage of the many benefits you'll get when you insulate with FOAMGLAS, the strong, rigid insulation that stays dry, is fireproof and acid-proof. Send today for a sample and our detailed booklet describing the use of FOAMGLAS to insulate roofs, walls, ceilings and floors.

PITTSBURGH CORNING CORPORATION

Dept. AH-104, One Gateway Center • Pittsburgh 22, Pa.

FOAMGLAS®

the cellular, stay-dry insulation



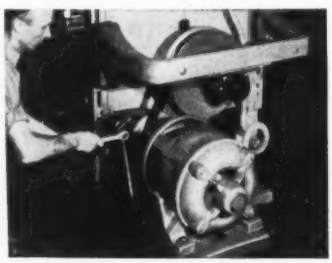
PITTSBURGH PC CORNING

Pittsburgh Corning also makes PC Glass Blocks

Adjust your Spinning Speeds without stopping the frame!

REEVES
VARI-SPIN DRIVE

●Now you can obtain new versatility, greater speed flexibility in your spinning frames . . . completely eliminate belt changes and pulley changes . . . cut downtime to an absolute minimum . . . simply by installing REEVES new Vari-Spin Drives using your present NEMA frame motors! REEVES Vari-Spin Drive gives you complete speed adjustability to provide the exact spinning speed you need for any yarn set without stopping the frame . . . *completely eliminates old-fashioned trial and error methods of "hunting" for exact speeds* . . . all in one compact unit which nests in narrow aisles!



TURN OF A SCREW changes spinning speed. Speed changes are immediate and positive . . accurate to a fraction of an rpm.

Send today for new Vari-Spin Bulletin W6-S-1

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

cleaning efficiency of the card deteriorates as the wire fills up. Cleaning is at its best just after stripping and at its worst just before stripping. This principle can be verified by an analysis of the material fed and the material delivered with a Shirley Analyzer. The cleaning efficiency of the machine can be expressed as a percentage by the formula:

$$100\,\frac{(P_1 - P_2)}{P_1}$$

where P_1 = percentage of trash in lap

P_2 = percentage of trash in sliver

Doffer-Speed Influence

After the effect of stripping on the cleaning efficiency of the card has been found, the influence of doffer speed can be determined. The efficiencies before and after stripping are necessary to emphasize the importance of correct timing of the tests to give average results. Tests may then be taken at the same time relative to stripping at several doffer speeds.

The accompanying graph shows typical results from a series of tests. The doffer speeds and the cleaning efficiencies obtained are:

Doffer speed	Cleaning efficiency
6 (rpm.)	77.8(%)
10	73.5
14	69.5
18	65.0

On being plotted, these points lie almost on a straight line. So by drawing a straight line, with two results at each side, we get a graph showing expected efficiencies at any practical doffer speed. The actual efficiency obtained would not necessarily be on the line, but it would not be far from it.

Since the relationship is for all practical purposes a straight line, the equation representing the line is:

$$Y = ax + b$$

Taking two points on the line, we get:

Rpm. of doffer		Cleaning efficiency
1. 19	=	$63.7\,a + b$
2. $6\frac{1}{2}$	=	$77.5\,a + b$

Subtracting Equation 2 from 1:

$$12\tfrac{1}{2} = -13.8a$$

$$a = -0.91$$

Substituting in 1:

$$19 = b - (0.913 \times 63.7)$$

$$b = 77$$

$$\text{Cleaning efficiency} = \frac{77 - \text{rpm. of doffer}}{0.91}$$

Running Cards to Capacity

Since the phenomenal rise of mechanically harvested cotton, a lot of opening and cleaning lines have become inadequate; and more attention must be given to the cleaning capacity of the cards. After dividing

For more information, write direct or use Reader Service post card.

STA report shows increased use of GAULIN-HOMOGENIZED SIZE

HERE are the typical experiences of 33 North and South Carolina Mills: as told to the STA. Read them and you will have the reasons why you should give a Gaulin Homogenizer a try.

9 in 10 mills say their entire production is now on Gaulin-Homogenized size.

8 in 10 have switched to pearl starch since adding a Gaulin.

7 in 8 claim greater uniformity of added size on homogenized warp.

3 in 4 report a decrease in hard size.

5 in 9 report improved size penetration of their yarn.

1 in 2 say the quality of the warp yarn is greatly improved . . . another 16% claim a little improvement.

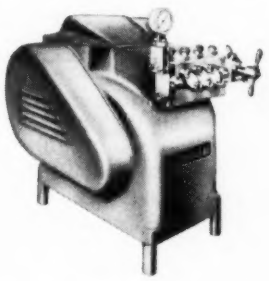
2 in 3 find the viscosity of homogenized size is more uniform than regular size cooked in the conventional manner.

3 in 33 find they can store Gaulin-Homogenized size 8 hours before its usefulness is gone, 8 mills say 16 hours, 14 say 48 hours, 3 say it varies, 5 will not store their size.

All mills say they consider a Gaulin Homogenizer a worthwhile investment.

And how long does it take for a Gaulin to pay for itself? Well, 8 of the 33 mills report 6 months, 8 say 12 months, 13 say 18 months, 2 say 24 months, 2 say 36 months as they are replacing converted starches with homogenized pearl starch. They all say that starch represents the principal savings. Other savings include shorter preparation time, fewer seconds due to hard size, lower steam consumption due to shorter cooking cycles, and ability to store size over the weekend.

Give a Gaulin Homogenizer a test in your mill. We'll be glad to install one for you on a guaranteed-performance basis. Whether you're making cottons, worsteds or synthetics, just drop us a line asking for one of our sales engineers to call.



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World's Largest Manufacturer of Homogenizers
Triplex Stainless-Steel High Pressure Pumps and Colloid Mills

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Name Brand Products

ride smoothly on

ALVEY engineered conveyors

The well-known trademarks above belong to a few of the many important textile producers who place their confidence in Alvey Engineered Conveyors.

These mills know how cartons, rolls, bales, folded goods, doff boxes, bobbins and many other textile units are successfully conveyed by Alvey equipment.

Your letter will bring an Alvey engineer to discuss your conveyor problems with you.

Every time you MANhandle a package, you add to the cost and nothing to the value; therefore, put your packages on Alvey Conveyors that are engineered to fit your individual requirements.

ALVEY

ALVEY CONVEYOR MANUFACTURING COMPANY
9305 Olive Street Road, St. Louis 24, Missouri
Branch Offices in Principal Cities

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carding costs into labor and machinery, it might prove economical to decrease the speed of the card. In any case, from a quality point of view, it is not wise to run cards with a higher doffer speed than is absolutely necessary.

Care of the Card

The feed plate must be kept smooth and highly polished to keep the underside of the lap sheet from dragging or buckling and feeding irregularly. The length of the nose of the plate should be suitable for the staple length being processed.

The feed roll needs attention to insure a firm grip of the lap sheet to prevent the lickerin plucking tufts of fibers from the lap fringe. Care should be taken to keep the bottom of the feed-roll bearings from touching the bottom of the vertical slot into which they slide. Oil from these bearings must be kept from creeping along the feed roll by capillary action, and the grooves must be kept in good condition.

The lickerin is often neglected, but it determines to a large extent the evenness and cleanliness of the sliver; consequently, it should come under routine inspection. Lickerins with dull and irregular teeth can be indirectly responsible for damaged cylinder and flat wire.

The tips of the teeth should present a true line from end to end, and they should represent a true circle from one end to the other. Otherwise, cotton will be detached from the lap fringe in irregular-sized lumps along with foreign matter, which eventually gets embedded between the wire of either the cylinder or the flats. The teeth should be kept sharp and erect by periodically using the dressing and grinding machine. The efficiency of the lickerin starts to deteriorate the moment it is put to work; the points of the teeth become blunted by passing through the lap fringe at high speed, and any hard foreign matter is liable to bend the teeth.

Grind Light and Often

The carding capacity of the flats begins to deteriorate immediately after grinding; and for this reason, it is preferable to grind lightly and frequently rather than heavily and less frequently. Heavy grinding is also the cause of barbs and hooks, which tear the fibers and produce the fine white dust on the coiler cover that is characteristic of heavy grinding.

Because the flats are ground under the opposite deflection to their working position and because of the difficulty of producing wire with perfectly

TRITON GR-5

THIS NEW WETTING AGENT

ALSO GIVES YOU HIGHLY

EFFECTIVE REWETTING

EVEN AFTER PROLONGED

FABRIC STORAGE

TRITON GR-5 is not only soluble in water in all proportions but is stable—particularly to lime and magnesium salts—and electrolytes. And TRITON GR-5 is economical, too. But that's only half the story.

TRITON GR-5 is an excellent *rewetting* agent. It wets back after it has dried into the fabric, permitting high absorption under normally difficult conditions, and maintaining fabric absorbency through prolonged storage.

What's more, TRITON GR-5 puts a real sales feature into towelings. They are extra absorbent *when new*—don't need usual pre-use washings housewives complain about.

CONSIDER THE SPECIAL FEATURES OF THIS ECONOMICAL NEW WETTING-REWETTING AGENT; THEN CALL YOUR NEAREST ROHM & HAAS OFFICE.

CHEMICALS FOR INDUSTRY

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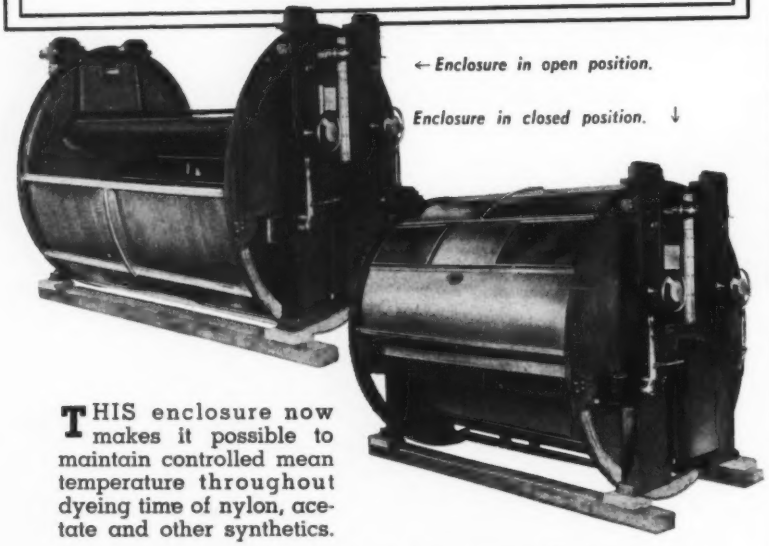
GLASCO

DYE JIG ENCLOSURE

for Better, Faster

Dyeing of Synthetics



← *Enclosure in open position.*

Enclosure in closed position. ↓

THIS enclosure now makes it possible to maintain controlled mean temperature throughout dyeing time of nylon, acetate and other synthetics.

As a consequence, dyeing time is shortened. Uniform stripping is assured in redyeing or changing the color of a fabric. Chrome blues and other difficult colors can be jig-dyed. Colors are well dispersed, and level dyeing without selvage shading is possible. In soaping, temperature is prevented from rising too high and so causing a dull finish. Steam and water are saved.

Other advantages

New design of hood saves space—no overhead obstructions, doors on stainless steel rollers swing down and under jig when open—minimizes dripping—prevents steam blast toward operator when hood is opened—no cables, chains, counterweight posts to obstruct. GLASCO jig enclosure can be fitted to any jig—note big windows for easy observation of interior when jig is closed.

Send for full details

Manufacturers of modern, custom built metal equipment for wet processing uses, including Dye Jig Enclosures, Dye Tubs and Becks, Wash Tubs, etc., of stainless steel and other metals that resist corrosion under most alkali and acid conditions.

GLASCO EQUIPMENT CORP.

Pioneer Fabricators of Stainless Steel Equipment

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equal temper, it is desirable to take the flats off the card periodically and grind them with the grinding roll underneath. To prevent loss of production and to put this routine work on a schedule (once every 4,000 carding hours is not too frequent), at least one spare set of flats is necessary.

Beaumont's New Cloth Room

CONTINUED FROM PAGE 108

cloth machine is threaded over the machine and under the bridge and is rolled up over two rollers at the back of the inspector.

When the first roll of cloth is inspected, the second is pushed down the rectangular stand to the former position of the first roll. The second roll is pinned to the end of the first roll to avoid rethreading the cloth under the bridge.

Soon after the second roll is started, a man places another roll of cloth in the back position of the rectangular frame. He makes regular rounds putting up cloth and servicing 12 inspecting machines. His job is easy because he does not have to remove the cloth.

As a roll of cloth is inspected, it builds up on a tube mounted over the center of two rollers similar in appearance to loom take-up rollers. Two short pins are inserted into each end of the tube. A slotted stand for each of the pins holds the roll of cloth in position and lets the pins rise as the diameter of the inspected roll of cloth increases.

Conveyor Belt Removes Cloth

When the end of the roll of cloth is reached, the inspector pulls out the two pins in the stands and pushes the cloth off onto a conveyor belt. There is no strain or lifting because the roll of cloth falls down about 10 ins.

The conveyor belt is in the center of two rows of inspecting machines and removes cloth from both rows. There are 12 frames in each row. When the cloth reaches the end of the conveyor belt, a baffle guides it off onto a 16-in.-high hardwood inclined platform long enough to hold 12 rolls of inspected cloth.

The platform is inclined so that the cloth rolls to the end, where it is rolled off onto a low truck for further processing. A dead man, made of a piece of stitched cloth tubing 48 ins. long filled with small pieces of cloth, stops the cloth at the end of the platform to keep it from rolling off.

New V-belt drives were added to the machines; and the machines are started, stopped, and reversed with foot-pedal controls.

Four inspecting machines were kept

Take advantage of these Free Celanese technical bulletins

In order to help mill customers and serve the textile industry generally, Celanese makes the following technical pamphlets available without charge in the quantity that you need. These bulletins have been prepared by the Textile Division, Celanese Corporation of America.

1. "Cone-Over-Cone Plying for 'Colorandom' Effects"—Complete instructions, including working blueprints, for plying yarn, quilling and weaving random colored fabrics.

2. "Processing Fortisan* Yarn"—Yarn characteristics, warping on both cotton and silk systems, slashing, quilling, weaving, throwing, dyeing and finishing of this super-strong Celanese* rayon.

3. "Solvent Dyeing of Fabrics Containing Celanese* Acetate"—Information and processing suggestions to obtain added wet fastness properties in fabrics containing acetate fiber by means of solvent dyeing.

4. "Dyehouse Processing of Fabrics Containing Celaperm*"—Finishing techniques for fabrics containing Celaperm acetate yarns with table summarizing Celaperm fastness to bleaching, stripping, cross dyeing and after treatments.

5. "Acetate Blends of Improved Performance"—Engineering blends of acetate and rayon, and acetate, rayon and nylon for greatest performance characteristics . . . finishing techniques to enhance these characteristics further . . . construction, dyeing and performance characteristics of acetate and wool blends.

6. "Silicones versus Can Sticking"—Coatings on slasher cans and how this treatment helps prevent broken filaments, rough edges and minimizes water spots.

7. "Physical, Chemical and Electrical Properties of Celanese* Acetate Yarn Pertaining to Acetate as an Electrical Insulating Material."

8. "Reduction and Control of Reed Marks" (available soon)—Preventive steps to eliminate warp streaks in fabrics caused by faulty or damaged reeds . . . making and using the triple spring reed.

9. "Handbook of Celaperm* Yarn Performance" (available soon)—Describes color performance of this yarn against all normal color hazards, including washing, wet or dry crocking, sunlight deterioration, rubber degradation resistance.

10. "Preparation of Celanese* Acetate Tricot for Printing." (available soon)

Celanese

Corporation of America

For your copies of any of the above bulletins, write to: Customer Service Dept., Textile Division, Celanese Corporation of America, Box 1414, Charlotte, North Carolina.

*Reg. U.S. Pat. Off.

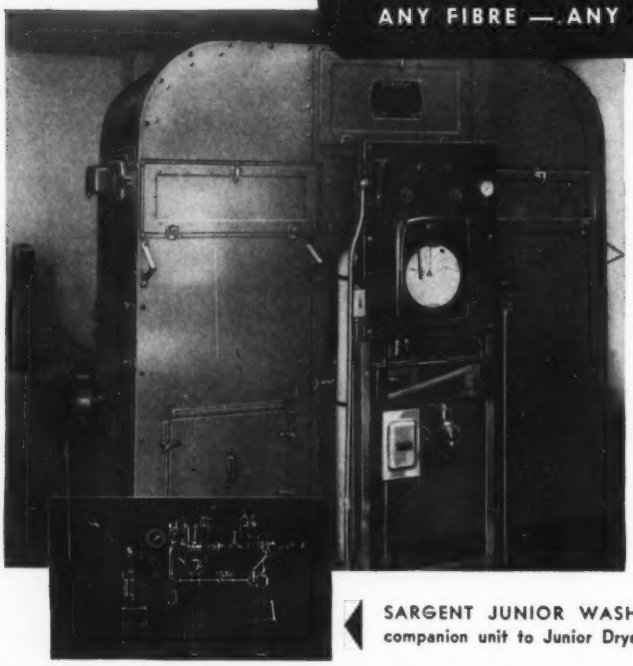
They're Terrific

SARGENT'S LABORATORY TWINS

A JUNIOR SIZE DRYER

and a Sample Washer

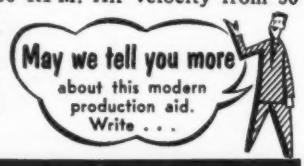
ANY FIBRE — ANY BLEND



SARGENT JUNIOR WASHER — companion unit to Junior Dryer.

Small enough for your pilot plant or your laboratory, SARGENT'S Junior Model Dryer will show you the one best economically practical way to dry all fibres, natural or synthetic staple. The perfect running mate to SARGENT'S Junior Washer. Establishes easily and accurately every factor that influences proper drying procedure for any fibre or blend.

Height — 7'1" Width — 7'6" Length — 8'10½". Selective recirculating air flow — updraft, downdraft or cross convection. Two small sample trays for very small-lot drying. Main chamber may be used for pole, tray or apron drying. Fan speeds variable from 180 to 1800 RPM. Air velocity from 50 to plus 1000 FPM. Complete instrumentation provided for control and recording of every phase in drying cycle. Once determined, drying process may be transferred to regular production line without change. For speedy, economical drying, set the cycle first on SARGENT'S Junior Model Dryer.



C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1852 Massachusetts

REPRESENTATIVES: F. E. WASSON, 519 Murdock Rd., Philadelphia 19, Pa.
A. L. MERRIFIELD, 730 Brooks Ave., Cincinnati 15, Ohio
W. S. ANDERSON, Carolina Specialty Co., Charlotte, N. C.
HUGH WILLIAMS & CO., 47 Colborne St., Toronto 1, Canada
EMERICO RIEDL, Juan Carlos Gomez 1461, Montevideo, Uruguay

with the overhead frames for inspecting cloth that has to be inspected on both sides. The roll of cloth being inspected is stationed in the back position of the rectangular stand. As the cloth is inspected, it is run back under the frame to the inside position of the stand; then when the first side of the cloth is inspected and rolled up, it is turned right for being inspected on the other side.

Inspecting, burling, and grading are combined in one operation at the inspecting machines on all wide fabrics. A few narrow styles of cloth are inspected and then graded as they are folded.

Reducing Oil Stains

CONTINUED FROM PAGE 89

9. Oil or grease from the hands or clothing of workers
10. Lubricant dripping from overhead-shaft bearings or from machinery located on the floor above

How Woven Cloth Is Stained

Cloth is often damaged by oil or grease after it is woven. Some of these stains can be removed; but lubricants that have been used for some time usually contain particles of metal, and when this residue becomes embedded in the fabric, it is almost impossible to remove.

Oil and grease can get on the cloth during and after weaving from a number of sources. Among them are:

1. Lubricant blown onto the cloth by careless handling of a compressed-air hose
2. Overlubricated temples
3. Loomfixers placing tools or loom parts on the cloth
4. Lubricant leaking from the protector-rod center bearing
5. Loomfixer, cloth doffer, shearing-machine operator, or other employee handling cloth with oil or grease on their hands or clothing
6. Employees setting rolls of cloth on a truck or floor that has oil spilled on it
7. Rolls of woven cloth rubbing the cloth-roll stand on the loom
8. Overlubricated bearings on the shearing machine, folder, and inspecting machines in the cloth room

How To Prevent Oil Stains

A few measures that will help prevent oil stains are:

1. Guard against overlubrication at every process.
2. Have adequate guards or splash pans over all gears and cams.
3. Use systematic training methods. Train fixers and oilers to use the cor-

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There are more than 150,000 brand names registered in the United States—competing for the customer's attention.

In this "battle of brands" brightly printed Gaylord Boxes are a vital link in the chain of visual impressions that pays off in sales.

This is true because Gaylord excels in printing. Gaylord has the specialized experience and equipment to make quality boxes do their selling best—with your brand name accurately expressed in eye-catching colors.

Put Gaylord Boxes on your selling team. Call your nearby Gaylord office.

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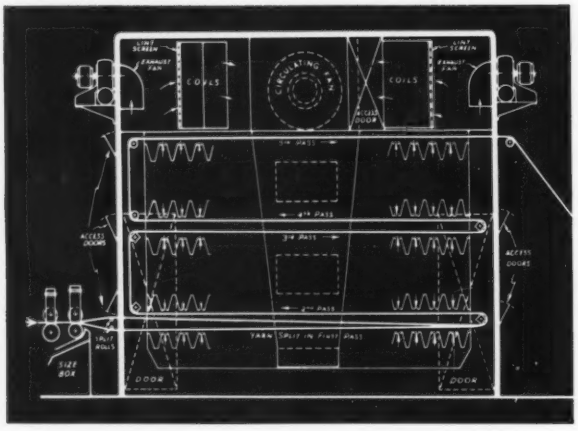
HOT AIR SLASHER DRYER



• • • • • **ROLLING & TANGLING ELIMINATED**
Mild, controlled, hot air is carried to and away from the warp through patented parallel flow nozzle ducts preventing warp tangling and rolling.

• • • • • **HIGH PRODUCTION**
Available in two sizes to suit individual production requirements with capacities varying from 900 to 1500 pounds per hour.

• • • • • **EASY TO CLEAN**
Complete accessibility to heating coils, fans, air ducts, warp and dryer housing is provided for easy cleaning.

• • • • • **MINIMUM FLOOR SPACE**
Housing is approximately 14′ x 12′6″ high x 9′10″ wide, accommodating 60′ wide warp. Other models are available for wider warps.

• • • • • **WET SPLITTING OF WARP**
By splitting the warp at the entering end, sticking together is reduced which assists the separating action at the front, in addition to reducing shedding and resulting in higher quality yarn.

For more detailed information on this latest equipment for slashing, write today.

PROCTOR & SCHWARTZ • INC •
PHILADELPHIA 20 • PA •

rect type and amount of lubricant. Teach the employee using a compressed-air hose how to use it so that he will not blow oil or grease from a machine into the material. He should know the location of all open bearings, cams, and gears so that he will not direct the stream of air directly into them.

4. Trace all oil and grease stains on the cloth to their sources.

5. Use coverings for adjoining looms when a warp is out and a loom is being cleaned.

6. Keep all boxes, trucks, and dollies clean.

7. Have slasher tenders check beam heads for oil or grease before yarn is run on it.

8. Check grease fittings in the battery hoppers periodically. If hoppers contain an open hole for lubricating the journal with oil, plug the hole or cover it with a piece of friction tape to prevent oil from spilling on the filling in the battery.

9. Keep all filling off the floor, and train batteryhands and filling men to be on the lookout for discolored filling.

10. Set a schedule to clean and relubricate all machine parts that can stain any of the yarn or cloth.

Duck Conveyor Belting

CONTINUED FROM PAGE 117

thinner. This coating prevents ply separation, protects the carcass against moisture, increases the flexibility of the belt, and cushions the plies against shock.

Often a breaker strip consisting of an extra ply of open-weave duck is inserted between the top cover and the first ply of the carcass to give the belt added resistance against shock loading conditions, to increase cover adhesion, and to prevent tearing.

Rubber Coating Protects Belt

The top and bottom covers are given a coating of rubber compound to protect the carcass from abrasion and injury. The rubber cover does not strengthen the belt but merely protects it. Rubber or neoprene covers are added in varying thicknesses, depending on the final application of the belt.

In deciding on belting construction, troughing (conforming to the idler profile) is usually a deciding factor once the strength has been determined. Rayon belts are more flexible than heavier cotton belts of equal strength, and, consequently, the troughing factors are superior.

To get ahead of the story...

the thread of the story is LUREX®

Today's fabric trends are past history at the modern textile mill. The creative textile producer lives and weaves in the future. And Lurex constantly lights the way with fresh and stimulating ideas.

Scores of important fabric successes had their beginnings in some new Lurex development—in the jewel tones, burnished metallics, opaque porcelain colors, multicolors, in superfine 1/100" Lurex or in specialized novelty yarns.

For increased mill efficiency, Lurex is available in a wide variety of put-ups, to meet individual requirements. These are constantly being expanded throughout broadened fabric yarn facilities. If you need even more personalized service, these same facilities stand ready to give it to you. Take advantage of them. Lurex, non-tarnishing metallic yarn, made only by the Yarn Division of:

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Boston: 43 Leon St. • Charlotte, N. C.: 510 W. 4th St. • Philadelphia: 1801 W. Cheltenham Ave. • Chicago: 330 S. Wells St. • Manufacturing Affiliates in Canada: William B. Stewart & Sons Ltd., Toronto & Montreal

Photo Courtesy Virginia-Carolina Chemical Corp.

Vicara®-Nylon Blends

for softness and beauty

dyed by GLOBE

Vicara-nylon blends for sweaters have special qualities. Vicara contributes comfort through its moisture absorption and natural softness. It gives warmth, beauty and costly appearance. Nylon adds toughness, ease of washing, and it can be heat set.

Vicara-nylon blend sweaters resist shrinkage, pilling, felting and mildew. They are also moth-proof. They are always beautiful to see, lovely to feel, and comfortable to wear.

For dyeing of of Vicara-Nylon Blends in white, pastel shades, or solid colors you can rely on . . .

1865 Globe DYE WORKS CO. 1954

Globe does package dyeing on tubes, skein and warp dyeing, warp mercerizing and sizing.

Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan—Dacron—Orlon.

4500 Worth Street Philadelphia 24, Pa.

Jefferson 5-3301

Books of Interest

BMT Included In Timestudy Book

TIMESTUDY FOR COST CONTROL, Third Edition, by Phil Carroll; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; 301 pages, $5.

New material in this Third Edition includes an outline of the Basic-Motion-Timestudy (BMT) method for defining work content and setting standards, examples of predetermined time standards, the alignment-chart approach to salary evaluation, and results of tests given to select men for timestudy work.

The book gives step-by-step procedures from how and where to start to the application of data in production control. It includes chapters on analyzing timestudy results, building standard data and data work sheets, getting incentive performance, and maintaining correctness in standards.

Radiation Effects on Textiles

A COMPILATION OF ABSTRACTS DEALING WITH EFFECTS OF NUCLEAR RADIATION ON POLYMERS AND FIBER-FORMING MATERIALS, School of Textiles, N. C. State College, Raleigh, N. C., 19 pages, $5.

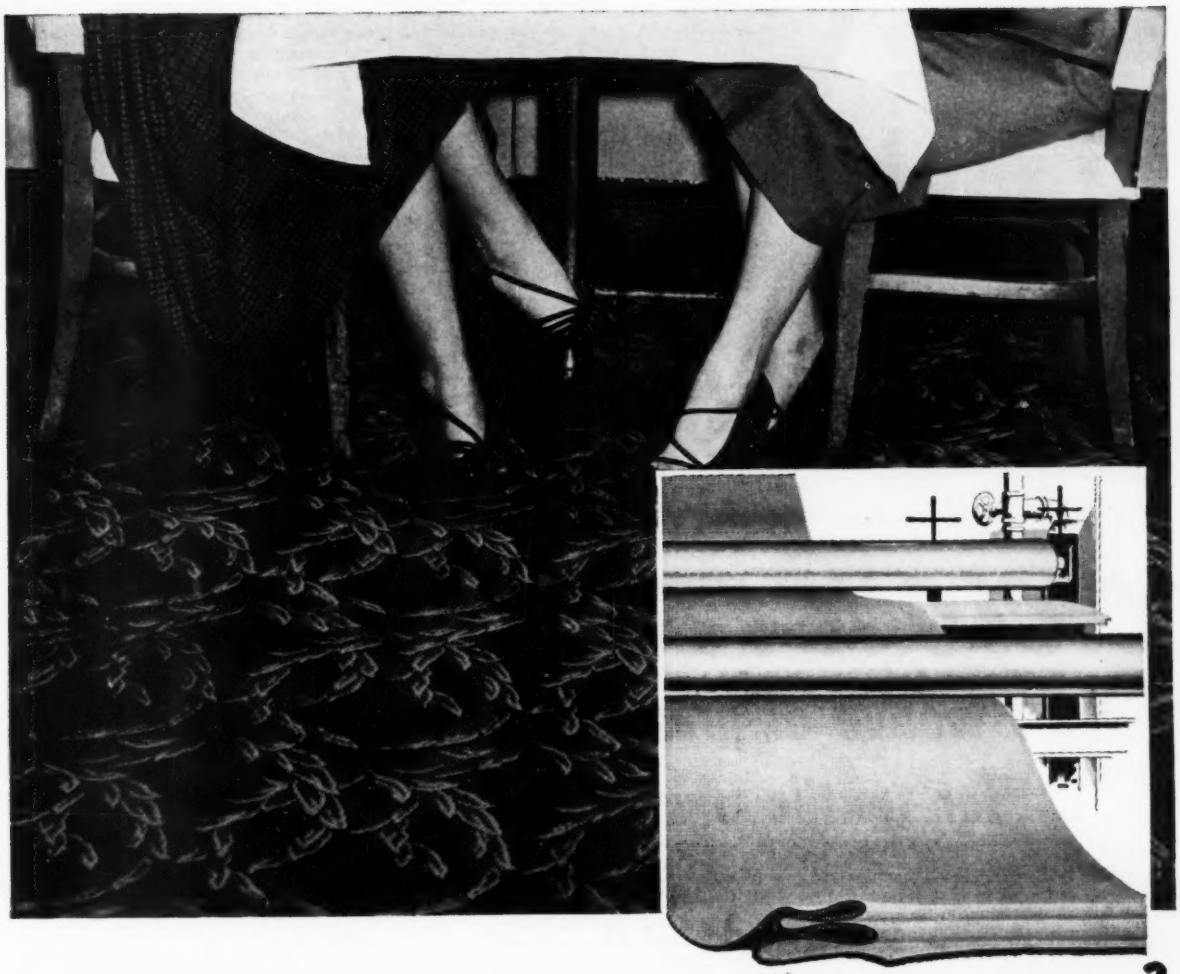
As an aid to current and future research on radiation effects on fibers and polymers, this survey of pertinent abstracts from the Atomic Energy Commission's Nuclear Science Abstracts was compiled by the research staff of the N. C. State textile school.

In a summary of the abstracts, Henry A. Rutherford, director of chemical research at the school, points out that early work indicates that radiation usually deteriorates or improves polymers; but as yet, the effects cannot be predicted. The early work indicates the need for further studies of radiation of various intensities and temperatures with various media. Such studies could lead to a better understanding of fiber structure and its relation to fiber properties.

Good Book But Hard To Read

INDUSTRIAL CONFLICT, Edited by Kornhauser, Dubin, and Ross; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; 551 pages, $6.50.

The stated purpose of this volume is to provide an interpretation and understanding of industrial-conflict problems rather than solutions. Thirty-nine authorities, mostly college professors in psychology, sociology, and economics, have



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The fewer the problems, the greater the profits. And Naugatuck's custom-compounded latices will help you *end carpet-backing problems these 4 key ways.*

Specially formulated to *your individual requirements*, Naugatuck Lotols® offer . . .

- **Substantially improved *hand and body***
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- **Prolonged carpet life**

Lotol backed carpets can be washed time and time again in the usual manner with no fear of backing breakdown. And there's never any puckering or shrinking—Lotol-backed carpets lie *flat* for life.

Compounded by the world's leader in fine latices, Naugatuck Lotols may *well* be the difference between problem and profit in *your* carpet backing operations. Our expert technical staff will gladly assist you with your backing operation. Simply write address below.

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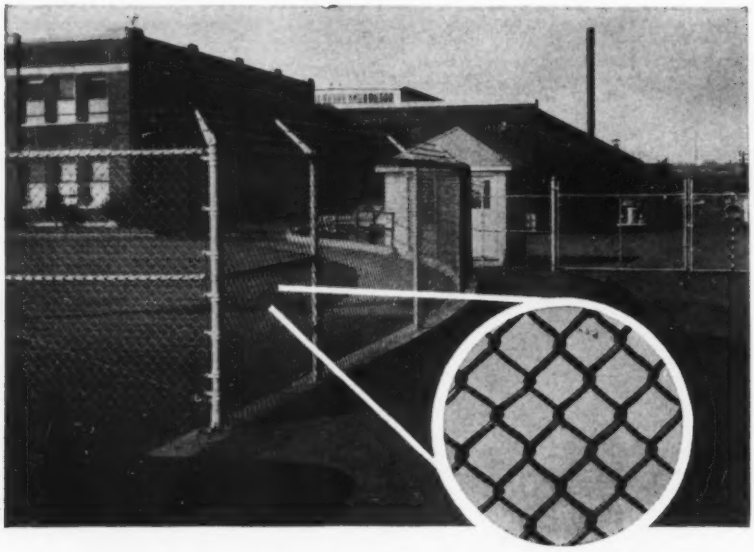

CYCLONE FENCE...

the "weave of protection" for textile plants

THE weaving of fabrics and materials is your main business, but here's another weave that should be your concern, too. It's Cyclone woven Chain Link fabric and it's used to make Cyclone Fence — the most widely-used property protection fence in the world.

Cyclone Fence is especially designed for use around all types of manufacturing plants—to discourage vandals, keep out thoughtless trespassers and simplify the regulation of entrance and exit traffic at authorized gates. Cyclone Fence is available in several different heights, with or without barbed wire toppings to meet your individual requirements. Our experienced engineers will be happy to give you free advice.

You *can* buy cheaper fence than Cyclone, but it will cost you more per year. Cyclone gives full value for your dollar. Nothing but brand-new, top-quality material is used throughout. Post and top rails are heavy and rigid, so they'll never buckle or sag. Gates won't drag. The chain link fabric is woven from heavy steel wire and galvanized after weaving for greatest resistance to rust and corrosion. And Cyclone is erected by full-time, well-trained experts—so that it will stay trim and good-looking for years.

NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE*

CYCLONE FENCE DEPARTMENT, AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION

WAUKEGAN, ILLINOIS · SALES OFFICES COAST TO COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Cyclone Fence, Dept. W-104, Waukegan, Ill.

Please send me without obligation, complete information on Cyclone Fence and Gates.

Name .....

Address .....

City ..... State .....

USS

Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute.

USS CYCLONE FENCE

UNITED STATES STEEL

contributed chapters on topics such as the nature of industrial conflict, its causes and conditions, methods used to reduce it, and unsolved problems.

For anyone willing to wade through murky sentences and put up with the academic mind, this book is a gold mine of information on industrial relations.

Cooperation Pays Off

STUDIES IN GROUP BEHAVIOR: I. CONSTRUCTION OF HIGH-PRODUCTIVITY GROUPS (PB 113950); Library of Congress, Publication Board Project, Washington 25, D. C., 53 pages, Microfilm $3, Photostat $7.75.

The function of personality measurement as an aid to the construction of more productive employee groups is discussed in a report of research conducted at Tufts College for the Office of Naval Research. Eight five-man teams of Navy enlistees of similar intelligence were set up in compatible and incompatible groups. The teams were given tasks requiring varying degrees of cooperation.

Under increasing time pressure, the compatible groups scored higher than the incompatible, and differences in productivity between groups increased as need for cooperation in tasks increased.

Pointers for Supervisors

CONTINUED FROM PAGE 129

So don't worry too much if your decisions aren't universally popular. Act as soon as you can, as fairly as you can, and then let the chips fall where they may. You may not win a popularity contest that way, but you will win respect.

Often you will find that a small percentage of your employees bring up most of the complaints. The same thing happens in employee counseling: a few people take up most of the counselor's time. It happens sometimes in plant accidents: the majority of employees go along year after year with no accidents, and a few employees are involved in one accident after another. These people are called accident-prone.

You may find you have grievance-prone employees, too. It's just human nature, and nothing much can be done about it except to try to settle their complaints as fairly as you do any others.

These, then, are the methods for handling complaints to the satisfaction of your employees—and of your management:

Listen to complaints as soon as they are brought to you.

Act quickly, after you are sure you have the facts.

Be fair, and don't worry about being popular.

Be consistent.

And the final tip is to use that rarest of commodities, just plain common sense.

In planning brine installations, too...

Better let an expert help you!

There's expert advice—and the other kind. And if you want the *right* kind of advice in planning a new brine installation for your plant, or in converting an old one, why not let a specialist help you—a Morton Consulting Engineer?

He is trained to know about all kinds of salt and all kinds of brine installations. His *specialized* experience with salt and brine making qualifies him to help your engineers plan the most efficient and economical installation for your particular needs.

If constructive counsel can be of help to you, get the facts about the Morton Consulting Engineer Service, for which there is no cost or obligation.

Mail the coupon today!

MORTON SALT COMPANY

Industrial Division, Dept. WY-10
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A SERVICE REPORT—

"On Job 4 Years ...No Repairs!"

BARCO *Revolving* JOINTS

Installation: American Viscose Corporation, Marcus Hook, Pa.

THESE BARCO 1" Type IBR Joints, shown in the above photograph, handle 45 psi steam at 20 to 30 RPM and run up to 8 hours per day. Their unusual record of four years service without repairs shows that, under favorable conditions of temperature, pressure, and speed, Barco Rotary Steam Joints are your best insurance for long, trouble-free service.

HOW MUCH is it costing you to use less efficient types of rotary joints? . . . For Repair Parts? . . . For "Down Time"? . . . For Extra Power Costs? CHECK YOUR RECORDS—then look at these Barco advantages:

- Trouble-free Performance! Thanks to long lasting "CTR" V-Type Seal Rings—a Barco Development.
- Low Maintenance; No Adjusting. Easy to inspect or service, with no special tools required.
- Low Torque—Cuts Power Costs up to 50%.
- Unexcelled Ability to withstand Vibration and Hard Usage.
- Better Temperature Control where steam is used for heating rolls due to better circulation. Barco Joints hold seal standing or running.

YOU CAN PROVE IT IN YOUR OWN MILL—make this test now with new, improved Barco Revolving Joints. Send for complete information and a copy of Catalog No. 300B. BARCO MANUFACTURING CO., 534L Hough St., Barrington, Ill.

BARCO

THE ONLY TRULY COMPLETE LINE OF FLEXIBLE BALL, SWIVEL, SWING, AND REVOLVING JOINTS

Systematic Yarn Check

CONTINUED FROM PAGE 94

3. Yarn-number variations in the same package
4. Roughed-up threads that have been covered by good winding
5. Sticking of yarn on the traverse
6. Knots tied in on the traverse
7. Slubs and thick places

Some faults are readily seen during knitting or before dyeing. The fabric structure is broken and a press-off occurs because: (1) loose ends are left untied; (2) ends not properly tied have worked loose; or (3) the carrier tube is blocked by a heavy slub, a large knot, or fluff.

Cuts or bursts in the fabric are caused by resistance to the flow of the thread. This condition causes the sinker to sever the yarn. Tight stitches are generally seen along the same course on both sides of the hole. A carrier tube partly blocked by broken filaments or splinters of size will cause holes.

These yarn faults will cause holes:

1. Uneven winding that forms tight ridges on the package.
2. Roughened-up threads.
3. Threads stuck on the traverse by patches of size (sometimes caused by accidental splashing of the yarn with water. The water softens the size, and a hard patch of size is left after drying).
4. A varying position of traverse. (The thread catches on the base of the cone during knitting.)
5. A damaged nose of the cone plucks at the yarn as it leaves the package.
6. Slubs, knots tied on the traverse, fluff, and pieces of yarn wound in on the traverse.

Yarn that flies out of the knitting elements and leaves an incomplete course is often unevenly twisted. The setting of the twist in the yarn has not been sufficient to subdue the liveliness of these portions of higher twist.

These yarn faults will cause faulty fabric, but the fabric structure will not be broken:

1. Broken filaments.
2. Snarls where the lively thread doubles back on itself in the needles and a double thread is knitted in the same course.
3. Fine and thick places due to a variation in denier or filament number.
4. Variation in density of wind from one cone to another. (This variation causes leg lengths from the same machine to differ.)

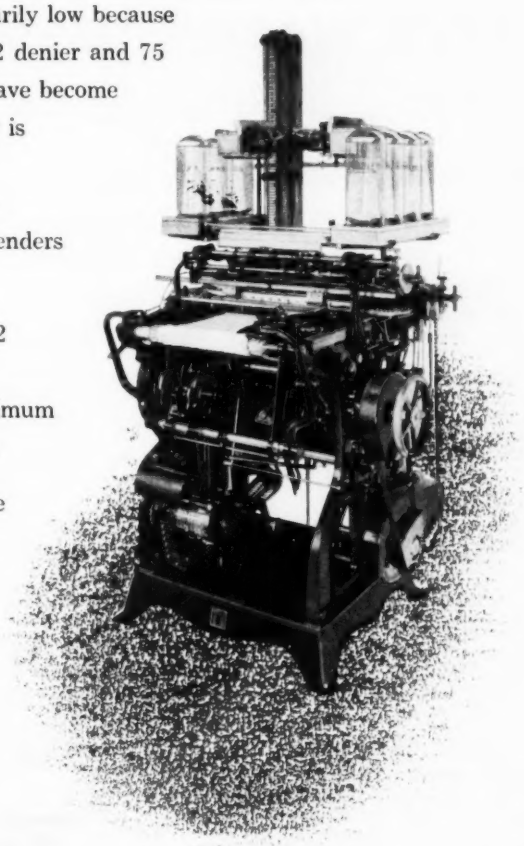
Insufficient size will cause a lack of stitch control during knitting. The fabric has a limp appearance. The method of application, the type of size,

FOR PRODUCTION-MINDED MERCHANDISERS

YOUR 75 IS A PROVEN, EFFICIENT MACHINE

The WILDMAN 75 Full Fashioned Hosiery Machine opens up new hosiery markets to merchandisers who understand its production efficiency.

In all the high gauges, utmost precision and supervision of operation assure the highest results. In the 75, your production is: 12-13 dozen pairs per operator per 8-hour shift — needle breakage is extraordinarily low because of the happy compatability of 10 & 12 denier and 75 gauge — temperature and humidity have become only minor problems; actually, quality is increased by proper temperature and humidity control. In addition, your 75 operates with a decided reduction in menders as compared to coarser gauges.



All this adds up to the fact that 10 & 12 denier on the 75 will give you a better wearing stocking to sell, one with higher elasticity, maximum beauty — all the features your modern market demands.

Make the 75 — *beautiful to see, lovely to touch* — on the WILDMAN 75, the single head unit that, as always, is an economical, efficient, automatic in operation machine. Inquire today for complete details.

WILDMAN

MFG. COMPANY, NORRISTOWN, PA.

MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

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1 CHECK YOUR NEEDS
2 CALL ATLANTIC STEEL
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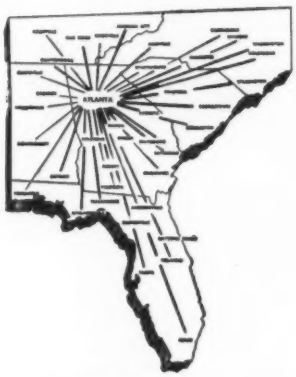

The minute your order is received. it is on its way to being filled and shipped. One of the South's largest and widest varieties of steel warehouse products, plus a willing organization coupled with the most modern facilities, makes this possible. So when you want steel, and need it in a hurry—

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and the dilution of the softening emulsion can also cause this fault.

Dyeing Brings Out Faults

Irregularities in uniformity of yarns and fabrics are often revealed after the goods have been dyed and finished. Removal of size, lubricant, tints, and other matters reduces the difference in light reflected from dissimilar surfaces.

When a two-tone stocking shows zones of two different shades, a knot is often found on the dividing course. This knot indicates that the original yarn had run out or that the stocking had pressed off and had been run on again at a later date with a different lot of yarn.

A variation in yarn twist sometimes occurs, and highly twisted yarns appear darker and duller. Tiger stripes in nylon hose are generally caused by varying denier size. This fault can be remedied to some extent in dyeing by using disperse dyes and light colors.

Flecks can often be traced to marks that have been made on cones for identification purposes. These marks are often accompanied by small groups of distorted stitches.

Aqueous dye solutions should not be used unless the yarn can be evenly wetted and evenly dried. So far, the best method of applying fugitive tints is with fat-soluble dyes dissolved in the coning oil.

Noncorrosive Conduit

CONTINUED FROM PAGE 104

The dyehouse, processing all types of yarns and threads, is serviced by a 1600-amp. bus duct with plug-in circuit breakers for the individual pump and blower motor circuits. The individual motor circuits are run in the Sealtite conduit for protection against moisture and corrosive fumes. The same protection is given to lighting, air-conditioning, control, and miscellaneous power circuits.

According to James W. Lakin, company engineer, the slightly higher initial cost of the flexible conduit is offset by the ease of installation. The need for bending pipe is eliminated, and the few fittings required are easy to install. Reduced maintenance is expected to lower plant operating costs.

To test the conduit used at the plant, Mr. Lakin placed several 3-ft. lengths of conduit, sealed on each end with Condulet boxes, in the concrete trough through which the dyehouse waste liquors run. After being submerged in the moving liquor for a month, the conduit was unaffected by the liquors.

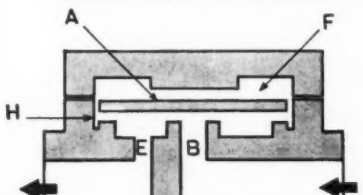
SARCO
Thermodynamic
STEAM TRAP

ACTUAL SIZE

this new trap virtually eliminates maintenance

SOLID STAINLESS STEEL DISC ACTS AS VALVE HEAD

HERE'S HOW IT WORKS!



Air and/or condensate raise valve seat disc A, discharge thru E. When steam follows, greater velocity causes it to strike body at H thus building up pressure in chamber F. This causes disc to seat, closing tube B. As pressure in F decreases by condensation, pressure in tube B raises disc and cycle is repeated.

The Sarco Thermodynamic Trap has proved successful on steam mains and separators; headers and soot blower pipes; engine and turbine stop valves, separators and casing drains; alternate heating and cooling applications.

2098-B

A solid stainless steel disc—practically indestructible—is the only moving part!

Most striking feature of the Sarco *Thermodynamic* Trap is its simple maintenance-free design. There's only one moving part—a solid stainless steel disc that practically lasts forever. There are no other moving parts to wear out or cause trouble.

Condensate, air and steam act directly on the disc valve which opens to discharge condensate and air—snaps shut to contain steam. There are no mechanical devices required to operate valve (see diagram at left). That means practically endless trouble-free operation.

Other advantages: small size, easy installation, not affected by shock or vibration, immunity to corrosive elements with all wearing parts stainless steel, same valve head and seat for all pressures to 600 psi and temperatures to 950° F.

Check these advantages to your own satisfaction at absolutely no cost. We'll send you a trap for trial. All you do is fill out the coupon and mail it in.

SARCO COMPANY, Inc.
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means Life-Lube Bearings need no re-lubrication, far less maintenance

If you are looking for a maintenance free bearing, then you'll certainly want to look to Life-Lube.

Here is a bearing that is specially designed for permanent lubrication. A neoprene seal bonded to a steel core keeps lubricant in and foreign matter out. With Life-Lube there's no chance of over lubrication or under lubrication, (a major cause of bearing wear)—and there's no grease fittings to trap dirt, lint, etc., or leak onto goods in process.

Best feature of all, service schedules are not needed with Life-Lube, so your maintenance men can be freed for other more important jobs. All Life-Lube Bearings are equipped with MRC std. 200 series ball bearings with wide inner ring, deep ball race groove, close curvature type providing maximum load carrying capacity with no sacrifice of radial space for shaft adaptor sleeve. Bearing is locked to shaft by engaging self-locking collar with eccentric and tightening set screw. Principal dimensions are such that these bearing units are interchangeable with most manufactured pillow blocks.

For more information write for Bulletin #194.

T.B. Wood's SONS CO. CHAMBERSBURG • PA.

Mechanical Power Transmission Manufacturers Since 1857

Cambridge, Mass., Newark, N. J., Dallas, Tex., Cleveland, O.

Waste-Control Program

CONTINUED FROM PAGE 103

Your waste standard for scavenger-roll waste is 0.35%.

If a temporary allowance for end breaks at the doff is necessary until a bad situation is cured, use the same basic calculation as above and add this allowance to your standard. This calculation is as follows:

$$\frac{\text{breaks per doff} \times \text{avg. time end is down} \times 100}{\text{time to run doff} \times \text{spindles per frame}} = \frac{12 \times 1.5 \times 100}{350 \times 240} = 0.02\%$$

Your standard for scavenger-roll waste becomes 0.37%.

The standard for roving waste can be calculated by using half or three-quarters of the last layer of roving on the bobbin as the basis for the standard. Actually, a complicated calculation can be worked out for this standard, but here is an easily understood, rapid calculation:

$$\frac{\text{layers allow.} \times \text{avg. grains per layer} \times 100}{\text{bobbin weight in grains}} = \frac{0.75 \times 62.3 \times 100}{7{,}000} = 0.67\%$$

This simple calculation will be within ±0.05% of several more-complicated calculations you could use.

Before you end your waste conference, suggest that there are alternate methods of handling and weighing waste that you would like to discuss with them during the next week or so.

Now that you know what your standard percentage of waste is, your actual percentage is obtained with the simplest divisor possible. The divisor to use with the actual weight of each waste is "pounds spinning production plus pounds spinning waste."

Get Agreement on Standards

From the foregoing calculations, you can easily obtain agreement with operating personnel on the fair allowances needed to build up your standard. However, more discussion is needed to obtain agreement on allowances for yarn waste, both warp and filling.

The simplest method is to determine the maximum number of filling bobbins that should not be exceeded in waste. For example, six bad bobbins per 1,000 should be enough for filling frames, while four bad bobbins per 1,000 should not be exceeded on warp frames. Some mills like to set their standard for yarn waste from this calculation:

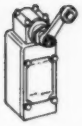
$$\frac{1 \text{ (bad bobbin per doff)} \times 100}{240 \text{ (spindles per frame)}} = 0.42\%$$

An illustration of how information

For more information, write direct or use Reader Service post card.

MICRO SWITCH Precision Switches

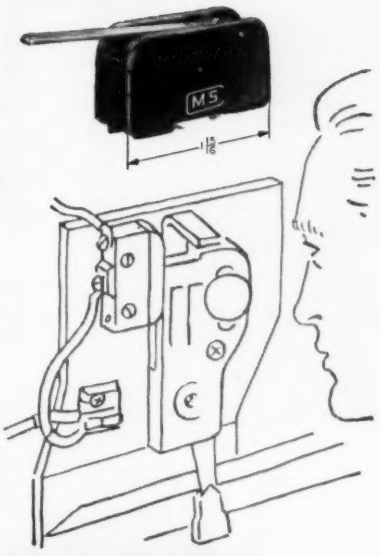
A PRINCIPLE OF GOOD DESIGN



Crompton & Knowles' engineers needed a small precise switch on a bobbin feeler. It had to be rugged. The to and fro movement of the lay was at the rate of 120 to 180 picks a minute. It had to be sensitive to light operating pressure to permit the slipping feeler tip lever to indicate. As the bobbin emptied, the feeler bar touched the switch to signal need for a refill. They got what they asked from MICRO SWITCH. Two other switches were installed to control the center stop motion automatically.

Both textile equipment designers and plant superintendents of textile mills are finding MICRO SWITCH precision switches ideal components for safeties, interlocks and thread-break detection. They find their use makes textile machinery more automatic, safer and more productive.

You are invited to contact your nearest MICRO SWITCH branch office for consultation on specific switch problems. For installation on plant machinery, stocks of MICRO SWITCH products are available from distributors in 161 key cities.



Both design engineers and plant operators find MICRO SWITCH products pep up textile machinery...

Plant engineers and maintenance men are finding more uses every day for MICRO SWITCH products to speed textile mill operation. At 96 Mill, Greenwood, S. C., for instance, two of these heavy duty limit switches were installed on each hoist to make quill loading an automatic job. The operator now just dumps the quills into the hopper and goes on his way. The upper switch stops the motor when the carriage reaches the top position. The lower switch stops the empty carriage when it reaches the floor.

The heavy duty MICRO SWITCH precision limit switches were picked because of their sturdy construction, ability to withstand the high humidity and lint-laden mill atmosphere, and the ready adjustability of the roller arm actuator.

MICRO SWITCH distributors are located in key cities to serve you with complete stocks of switches for plant applications. Consultation and advice on specific switch problems is available at your nearest branch office.

MICRO SWITCH provides a complete line of extremely reliable, small-size, high-capacity, snap-action precision switches and mercury switches. Available in a wide variety of sizes, shapes, weights, actuators and electrical characteristics. For all types of electrical controls.

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

FREEPORT, ILLINOIS

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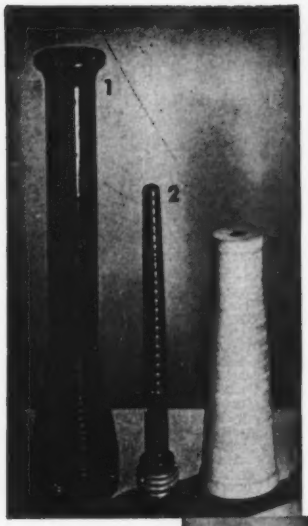
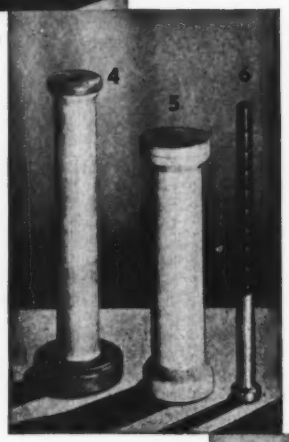
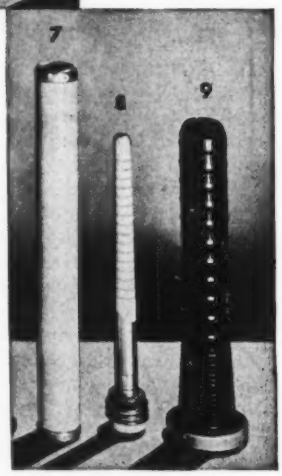


LOWELL
Bobbins, Cones Rolls & Tubes



1 Ring spinning bobbin
2 Automatic loom bobbin
3 Winder cone
4 Worsted twister bobbin
5 Winder tube
6 Bobbin for non-automatic loom with electric feeler motion
7 Warp spinning tube
8 Automatic loom bobbin for electric feeler motion
9 Worsted spinning bobbin

Lowell bobbins, cones, rolls and tubes are made from maple, birch or beech wood, as required. All wood is thoroughly seasoned, air dried and properly cured in a modern dry kiln. Bobbins are finished with oil, lacquer, shellac or enamel (baked on) as specified. Inspection is rigid and only perfect products are passed for shipment.



MAY WE QUOTE ON YOUR REQUIREMENTS?

LOWELL SHUTTLE COMPANY
Established 1896 • Incorporated 1914
15 TANNER ST. LOWELL, MASS., U. S. A.

Sales Representatives

Hendrik Van Brederode, 311 Godwin Ave., Midland Park, N. J.; W. P. Russell, P.O. Box 778, Atlanta, Ga.; West Philadelphia Supply Co., Emerald & Somerset Sts., Philadelphia, Pa.

can be worked together is shown on the accompanying graph, which is charted from daily weighings of waste. The weighings are totaled weekly and posted on the graph in percentage figures.

The dollar difference between the value of waste at standard and the value of waste below standard is a saving. This difference can be easily graphed or listed to show progress from month to month.

Once you are set up, follow up. With regularly scheduled supervisors' meetings for discussion and progress reports on waste reduction, gains can be consolidated.

Conferences with operating personnel are also necessary at least every six months. Keep all spinning-room personnel well-informed, and the spinning-room waste will stay down.

THE UNITED WAY

United Community Campaigns all over the nation appeal to you this month.

When your community volunteer worker calls on you for your once-a-year contribution to your town's Community Chest, United Fund, or Red Feather campaign, he brings you an opportunity to give your support to many appeals at one time.

Remember to give generously—the united way.

Hosiery-Mill Labor Costs

CONTINUED FROM PAGE 105

selves to socks from the truck, board them, and stack them about 30 doz. pairs on a tray. Boys from the pairing room deliver the trays to the pairer. Ten boarding operators average 10.1 doz. per hr.

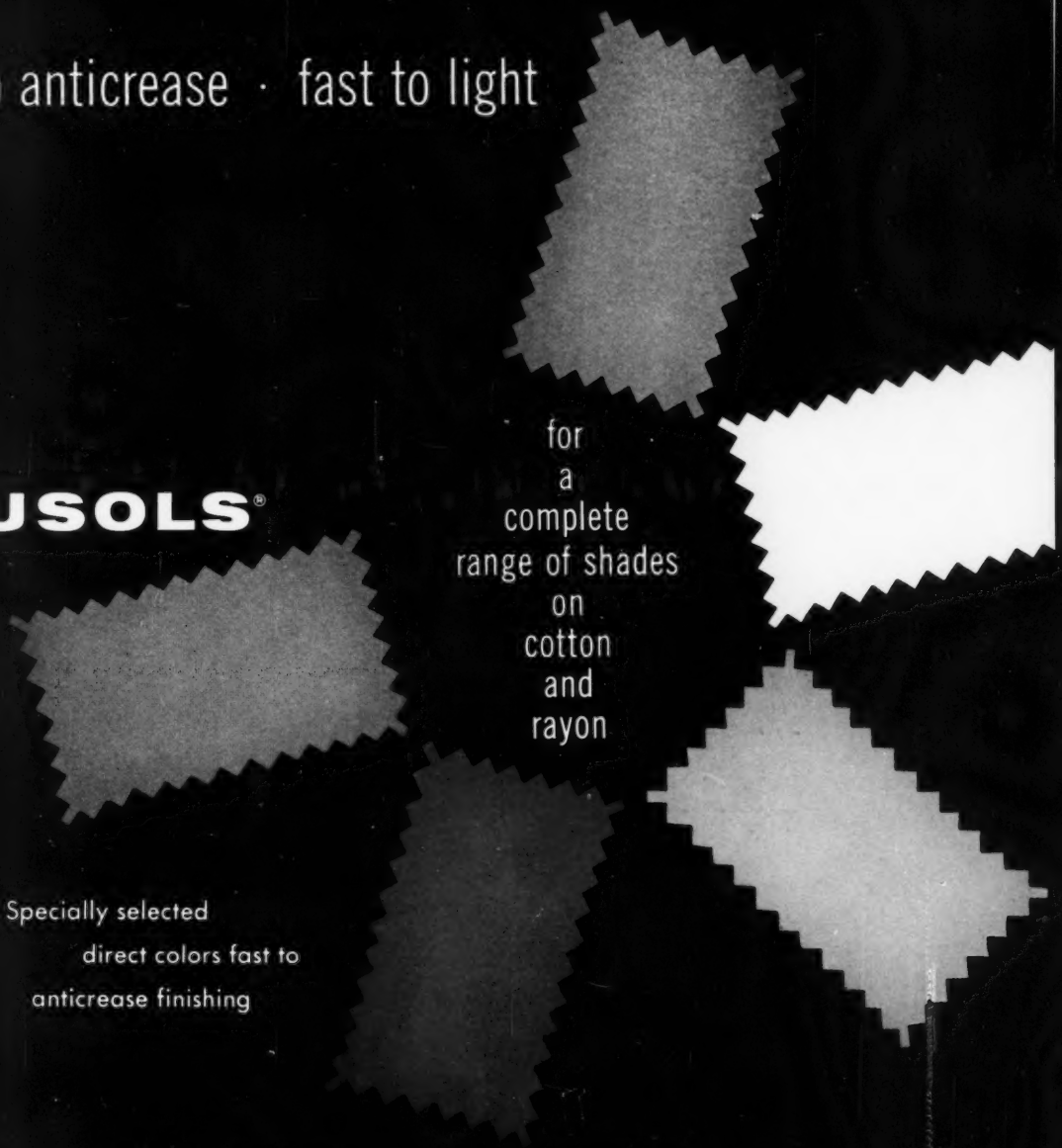
Pairing and inspecting is done by seven girls. The manhours per dozen pairs for this operation is 0.059. After this operation, the goods are carried by a material handler to selected bins so that orders can be assembled at this point.

Eight girls are employed to finish and box the socks. The socks have

fast to anticrease · fast to light

FASTUSOLS®

for
a
complete
range of shades
on
cotton
and
rayon



Specially selected
direct colors fast to
anticrease finishing

plus

- Light fastness — very good even in light shades
- Wet fastness — with resin treatment, fully adequate in light shades
- Simplicity of application
- Most are nonstaining on acetate and the acrylics

Write for samples of this interesting group of colors.
Our representative will be glad to present our new card
illustrating over 20 FASTUSOLS in various shades
including the latest additions to this line.

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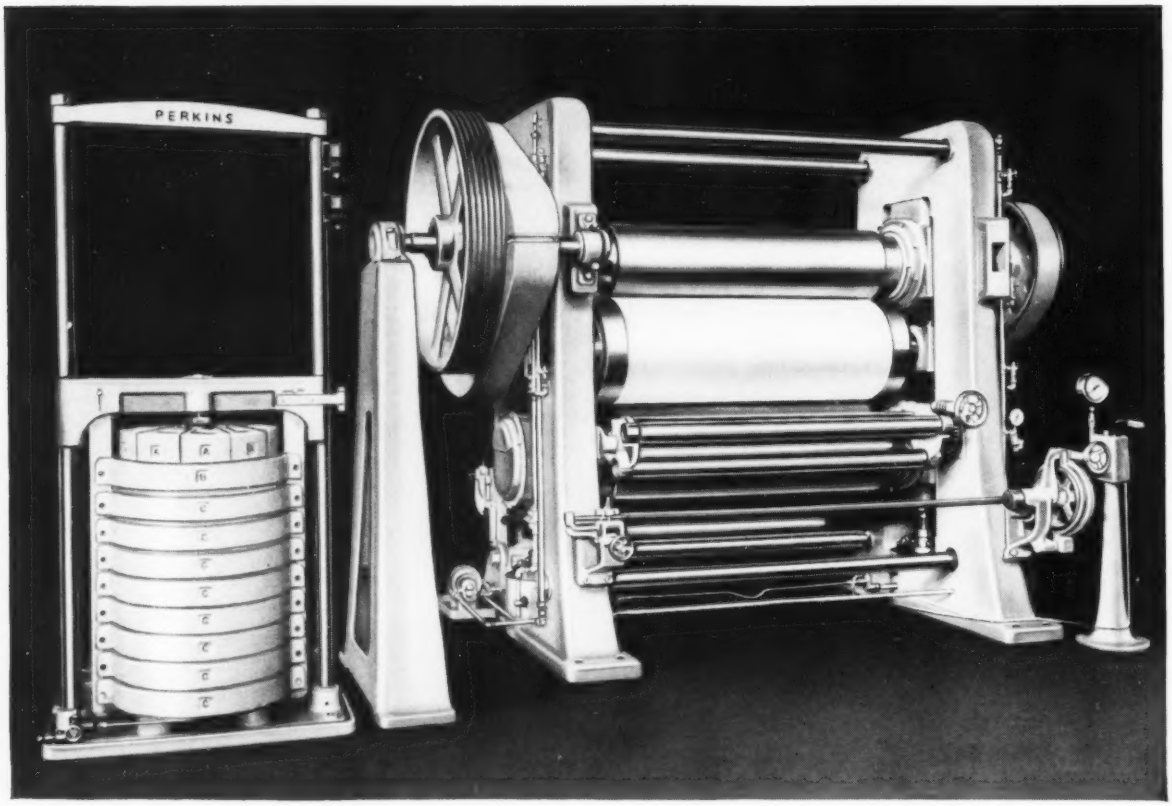


Here Is a Perkins Rolling Calender of Exceptional Merit

Installations in finishing mills are proving its reliability and high production capacity. 60" face 3-roll Hydraulic Rolling Calender — 100 tons maximum pressure, speed 70 YPM; anti-friction bearings throughout, oil circulating system Perkins hydraulic unit with dead-weight accumulator. Whatever your requirements, Perkins' engineers will solve your finishing problems in the modern way.

B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

two transfers and one rider ticket. The girls putting the goods in boxes pick up their own work, and two floor ladies provide the correct boxes. A boy takes the boxes to the shipping room on a hand truck, and three shippers fill orders from the bins containing the boxed socks.

About 6% of the output consists of rejects; half of these are sent to menders outside the plant, and the other half are sold as rejects.

Tricot Pattern Chains

CONTINUED FROM PAGE 111

All chains must be set in the same time whether two or three guide bars are used.

When three links for one course are required, six links are used for one repeat of the 1-0, 3-4, pattern. The links are then 1-0-2, 3-4-3. To compete the chain, eight repeats are required.

How To Make a Chain Setting for Four Times

The chain setting for four times is not well known and is seldom used. This setting is used for designs with underlaps of five needles, which are difficult to produce.

A chain notation of 1-0, 5-6, still leaves an underlap of three needles with the addition of one intermediate link. A second intermediate link must be used to close the gap. The reading for this pattern using four-times movements would be 1-0-2-3, 5-6-4-2,.

The first link of height 1 is the underlap. The second link of height 0 is the overlap, and the following two links are the intermediate links. The first two links in the next course are the operative ones, and the last two are intermediate ones. The intermediate steps can be other heights as long as the difference between them does not exceed two numbers.

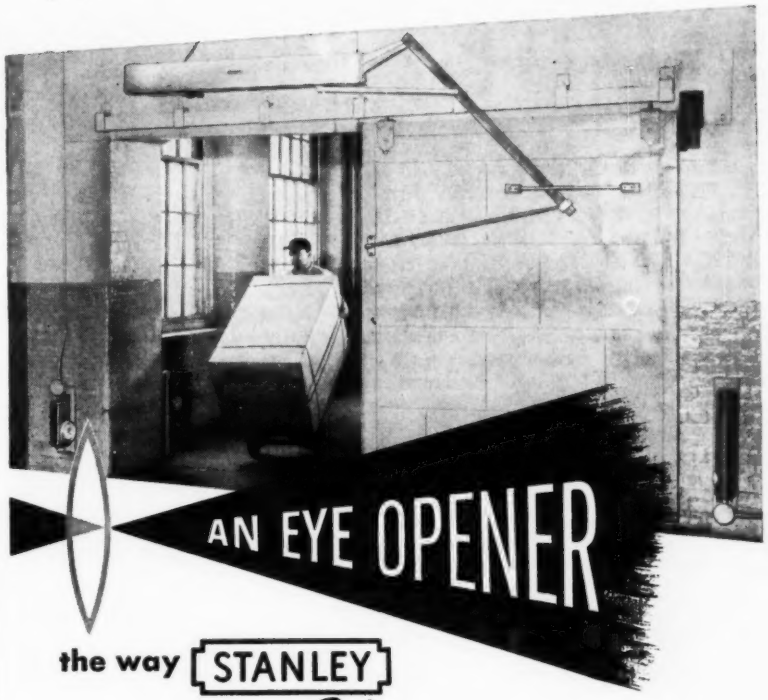
Four links constitute one course, eight links one repeat, and six repeats complete a chain of 48 links.

Gear Ratio Must Be Changed

The camshaft rotates once for each knitting cycle, and the chain drum gets its motion from the camshaft through normal gears and worm gears. The relation between the gears must be such that during one rotation of the camshaft, the number of links necessary to form one stitch must pass underneath the push rods of the guide bars.

The ratio of the gears must be modified to obtain the speed needed to pass two, three, or four links for two-, three-, or four-times movements.

Most tricot machines have change



the way STANLEY Magic Doors®
speed materials flow for TEXTRON

What better proof that automatic opening and closing Stanley Magic Doors will improve your mill's all-round efficiency is there than this — *all* the leading textile manufacturers in the country, including Textron, Inc., Manchester, N.H., have installed them in strategic locations in one or more of their plants.

the reasons may be real eye-openers:

STANLEY Magic Door CONTROLS

1. . . . reduce door and truck maintenance. Doors open automatically . . . close swiftly when traffic has passed. There's less chance for trucks to bang into doors that always open on approach!
2. . . . conserve costly conditioned air. When doors close immediately after traffic flows through, heat and humidity are saved.
3. . . . save time and energy. Productive man-hours aren't wasted when manpower is not required to open and close heavy doors.
4. . . . boost mill personnel morale. Workers are happier and more productive — they appreciate the fact that management is making their jobs easier.
5. . . . can be installed on new or existing doors that *swing, slide, or fold.* A variety of controls, ranging from the photoelectric Magic Eye (at Textron, in the picture above) and Magic Carpet, to pull cords and switches, are available.

THIS COUPON WILL BRING YOU ALL THE FACTS BY RETURN MAIL!

STANLEY® Magic Door CONTROLS

REPRESENTATIVES IN PRINCIPAL CITIES

THE STANLEY WORKS, MAGIC DOOR DIVISION
31310 Lake St., New Britain, Connecticut

☐ Please send full information on *Stanley Magic Door Controls.*
☐ Call when in *area.*

Company Name _____
My Name _____
Address _____
City _____ Zone _____ State _____

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For more information, write direct or use Reader Service post card.

for yarn or fabric—

improved superior finish

Here is new softness, fuller hand for your yarns or fabrics. It is the reason why more and more dyers and finishers specify Lauramine #20. Performance is outstanding with all colors. Lauramine #20 does not yellow whites or affect shades. It is also highly resistant to ageing and scorching. For your convenience, Lauramine #20, modified anionic softener, now comes in two forms — paste or liquid. It is fast dissolving, easy to use, compatible with starches and most finishing compounds. Uniform application and lubrication are assured. Write us for more information and a sample.

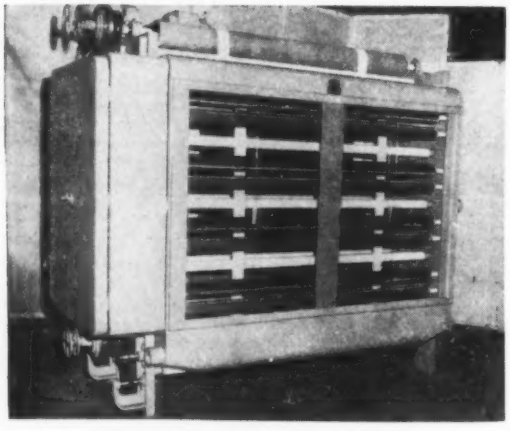
NEW

LAURAMINE #20

laurel soap manufacturing co., inc.

Wm. H. Bertoler's Sons • Established 1909
2608 East Tioga Street, Philadelphia 34, Pa.
WAREHOUSES • Paterson, N. J. Charlotte, N. C. Chattanooga, Tenn.

Other quality Laurel Products for better processing:
Coning oils for synthetic yarns — trough emulsions for cotton and woolen yarns — soaps and detergent compounds for scouring and soaping off after dyeing — dyeing assistants — special finishing compounds.



VERTICAL HIGH SPEED NAPPER
(PATENTED)

FOR
WOOLENS
COTTONS
SYNTHETICS
OR MIXES
WOVEN
KNITTED
OR FELTED

SEND SAMPLES FOR TEST NAPPING

OBSOLETES EVERY PLANETARY NAPPER

A flexible machine for any weight fabric producing any type nap. At cloth speeds to 200 yds. per min. Outproduces ten 36 roll planetary units. A better nap saving 10% dead loss.

PARKS & WOOLSON MACHINE CO.
SPRINGFIELD, VERMONT

gears to change the chain-drum timing in a short time. Here are the number of teeth or gears to change the timing on Reiner machines:

Number of teeth on camshaft gear	Number of teeth on worm-shaft gear	Timing
60	60	2
72	48	3
80	40	4

How To Time the Chain

After fixing the chain to the pattern drum, check the sidewise motion of the guide bars in relation to the forward and backward oscillating motions. Here is the correct setting:

Turn the machine slowly to bring the needles in the up position. The guide bars are swung back to the position in the illustration. At this point the rollers of the push rods should be at the start of the slope between the underlap and overlap link.

Continue to turn the machine, and the guide bars will swing further back while making the overlap. The overlap should be completed when the guides are back at the same position as when they started the overlap. The roller should now be at the end of the slope.

Always set the adjustment to the front guide bar. If resetting is required, bring the guide bars to the position illustrated and take off the worm-shaft gear. The drum can now be turned by hand to the required position and the gear connected. Alternately, the drum can be disconnected from the drive by loosening the worm gear on the pattern-wheel shaft.

In using a chain of more than 48 links running over idler wheels, the chain should be in touch with not less than one-third of the circumference of the drum and divided equally on each side of the guide-bar rollers. [*For explanations of overlaps and underlaps, see TW, Oct., '53, p. 108.*—EDITOR.]

Cotton-Mill Practices

CONTINUED FROM PAGE 79

XD looms
160 ppm.–1,628 to 2,924 hrs.
K looms
176 ppm.–2,640 hrs.
L looms
125 ppm.–2,000 hrs.
XP looms
144 ppm.–1,446 hrs.
154 ppm.–2,614 hrs.
XL looms
106 to 122 ppm.–1,712 hrs.

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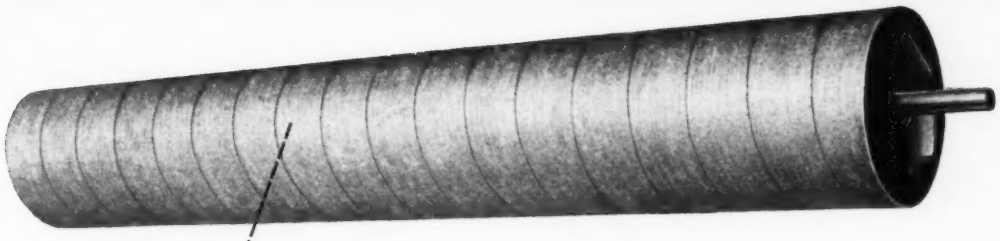
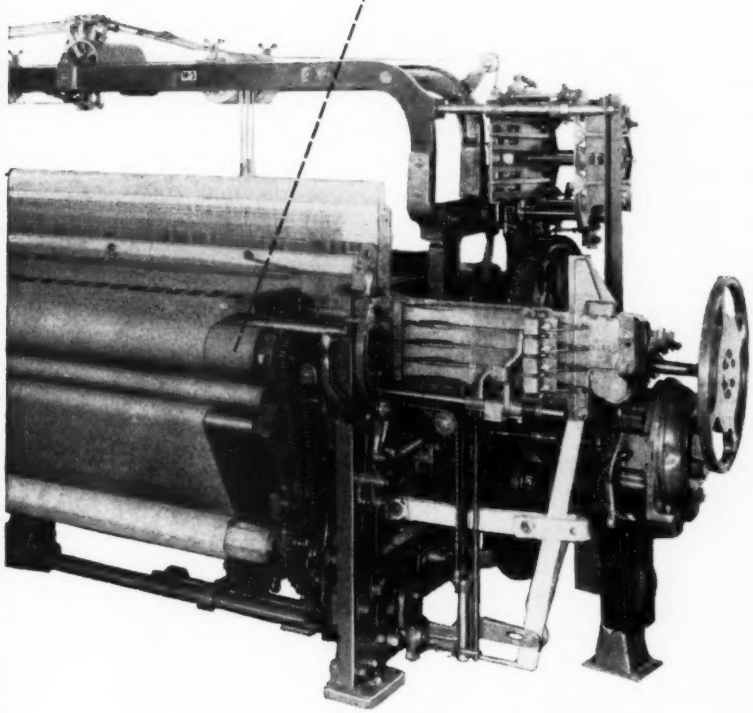


High friction plus smoothness in this take-up roll covering



Even if you're weaving fine chiffons or voiles, you don't have to sacrifice take-up tension to protect your fabrics. Use the roll covering that combines extra smoothness and high friction—Armstrong's NO-732 Roll Covering.

NO-732 is made of a recently developed synthetic-rubber compound that offers up to *twice* the holding of rubber. But it won't mark the most delicate of high-count materials. It's backed with a rugged fabric for added strength and good adhesion to the roll.

Test NO-732's remarkable grip. Rub a sample on any surface—your desk, your shirt sleeve, the cloth you weave. You'll be amazed that a cover this smooth can develop so much friction.

For test samples for your weaveroom, write Armstrong Cork Co., Industrial Div., 6710 Dauphin St., Lancaster, Pa.

TAKE-UP ROLL COVERINGS FOR ANY NEED

• Whatever the requirements of your looms, Armstrong can supply the right take-up roll coverings. Choice ranges from synthetic rubber, cork-and-synthetic, and rubber—to plain or gridded cork.

ARMSTRONG'S
Take-up Roll Coverings

Three-Way Scray

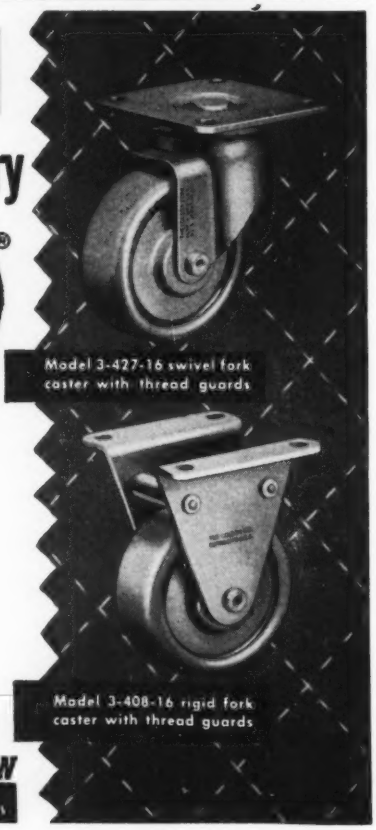
Multiple Scrays are used to save floor space, or where there is insufficient room for a 10 or 12 foot Type L Scray.

Like the Type L Scray, the 3-Way has a metal feeding-in roll, driven by a brake motor at approximately twice the speed in yards of the Brusher or Shear following. An 18" or 26" Cradle is in front, below the Sewing Machine, to receive the loom roll.

The ends are sewed together on a Railway Sewing Machine, using either a lap or butted seam, as wanted, then fed into the Scray.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS

Designed
by the Textile Industry
built by colson®



Our friends in the Textile Industry worked with us in developing casters and materials-handling trucks to meet their needs—*exactly*. The result is a line of casters, hand trucks, platform trucks, box trucks, and drum and barrel trucks that can add extra efficiency to any mill operation. COLSON Casters roll easily over all floors, swivel freely, are rust resistant. Many models have thread guards. Write us or consult the yellow pages for the COLSON office near you.

Write for free catalog—
"COLSON Trucks and Casters"

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS · LIFT-JACK SYSTEMS · INDUSTRIAL TRUCKS

► To increase shuttle life, follow these suggestions:

Align looms properly.
Set harnesses carefully.
Polish reeds well.
Inspect frequently.
Minimize power.
Parallel the picker.
Check shuttle guards.
Make sure quills ring up properly in shuttle.
Set transferrer correctly.
Shellac and tallow shuttles systematically.
Don't let shuttles become washboardy.
Use good pickers.
Keep shuttle hardware tight.
Try felt on box front and binder.

► On the question of checkstraps, eight mills use curved straps and three use straight ones. Two mills use a curved-straight combination, two use endless straps, and two use curved straps with a helper.

► Checkstrap life varies from 900 to 2,760 hrs. in the mills reporting in hours. Five mills reported checkstrap life of six months, and others from four to eight months.

► Here are some hints for longer checkstrap life:

Install properly.
Set picker to recommended sweep.
Check shuttle boxing.
Try endless straps.
Don't choke the strap.
Use the correct-length strap.
Try felt on the box and binder.

New Dyes and Chemicals

CONTINUED FROM PAGE 142

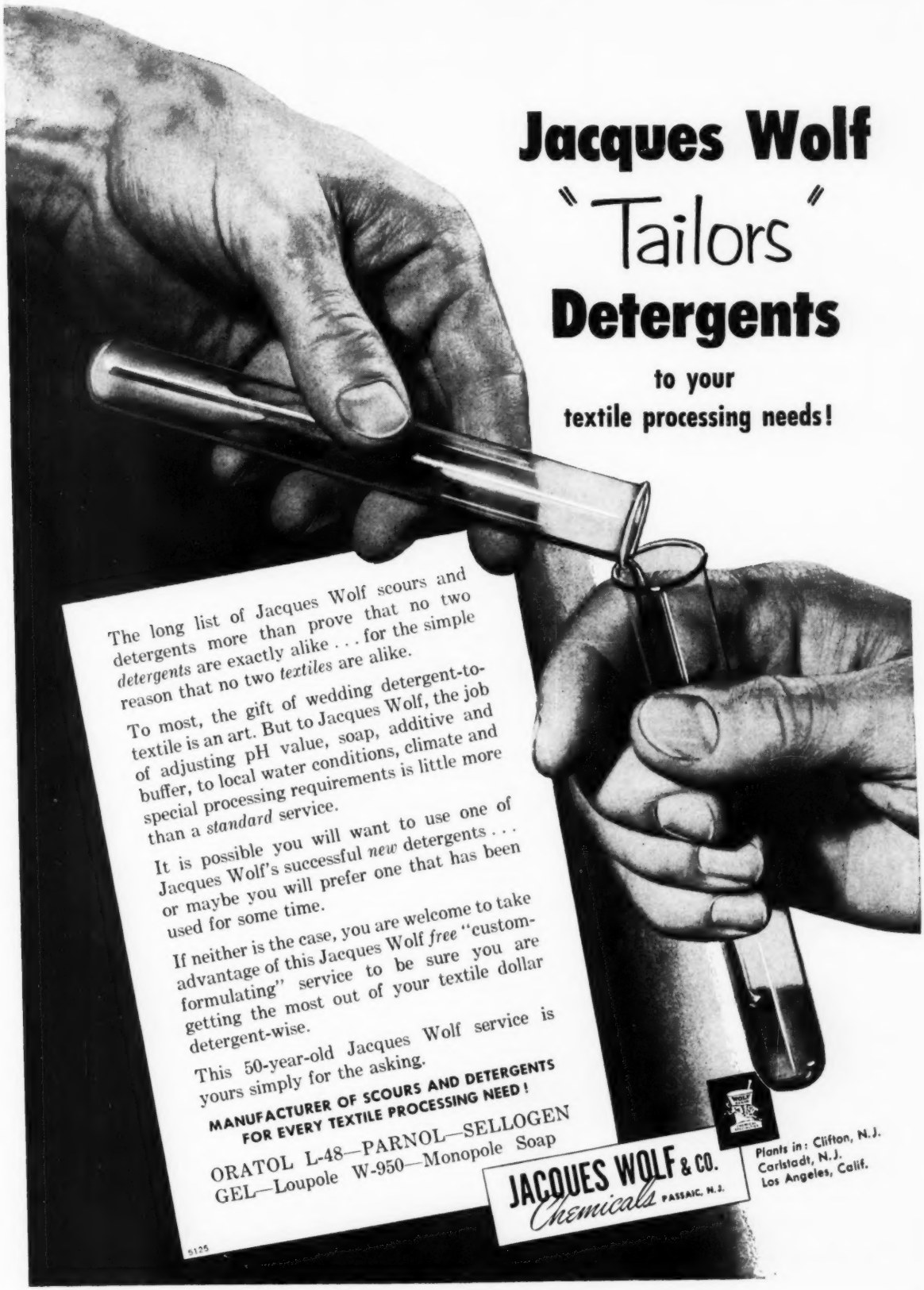
Brilliant Red 3BW, and Blue 3R yield bright fashion shades for women's wear. May be used for viscose-wool and viscose-nylon unions. Good shading colors for chrome dyeings or for dyeing bright shades on dark stock. Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.

Circle D-12 on Reader-Service Card

Shrinkage-Control Agent

CET

. . . stabilization agent for fabrics containing 50% or more of viscose or cotton. A water-soluble cellulose-reactive heterocyclic compound that has little tendency to become resinous. Stabilizes fabrics without stiffening effects associated with resin treatments. Controls shrinkage at high-temperature commercial laundering,


Jacques Wolf
"Tailors"
Detergents
to your
textile processing needs!
The long list of Jacques Wolf scours and detergents more than prove that no two *detergents* are exactly alike . . . for the simple reason that no two *textiles* are alike.
To most, the gift of wedding detergent-to-textile is an art. But to Jacques Wolf, the job of adjusting pH value, soap, additive and buffer, to local water conditions, climate and special processing requirements is little more than a *standard* service.
It is possible you will want to use one of Jacques Wolf's successful *new* detergents . . . or maybe you will prefer one that has been used for some time.
If neither is the case, you are welcome to take advantage of this Jacques Wolf *free* "custom-formulating" service to be sure you are getting the most out of your textile dollar detergent-wise.
This 50-year-old Jacques Wolf service is yours simply for the asking.
MANUFACTURER OF SCOURS AND DETERGENTS FOR EVERY TEXTILE PROCESSING NEED!
ORATOL L-48—PARNOL—SELLOGEN GEL—Loupole W-950—Monopole Soap
JACQUES WOLF & CO. Chemicals PASSAIC, N.J.
Plants in: Clifton, N.J. Carlstadt, N.J. Los Angeles, Calif.
5125

BRUSH UNIFORMITY ANALYZER*

tests 1000 feet of yarn in less than 4 minutes!

*Trade Mark.

CHECKING yarn quality is a fast and simple operation with the Brush Uniformity Analyzer. With the new Automatic Evaluator an exact numerical evaluation of non-uniformity eliminates guesswork and helps you control quality exactly.

Use the experience of our textile-trained engineers to improve and speed your quality control operations. Write Brush Electronics Co., Dept. GG-10, 3405 Perkins Ave., Cleveland 14, Ohio; or Southeastern Textile Instrument Office, 91 Cleveland St., Greenville, S.C.

BRUSH ELECTRONICS COMPANY

INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZO-ELECTRIC MATERIALS • ACOUSTIC DEVICES
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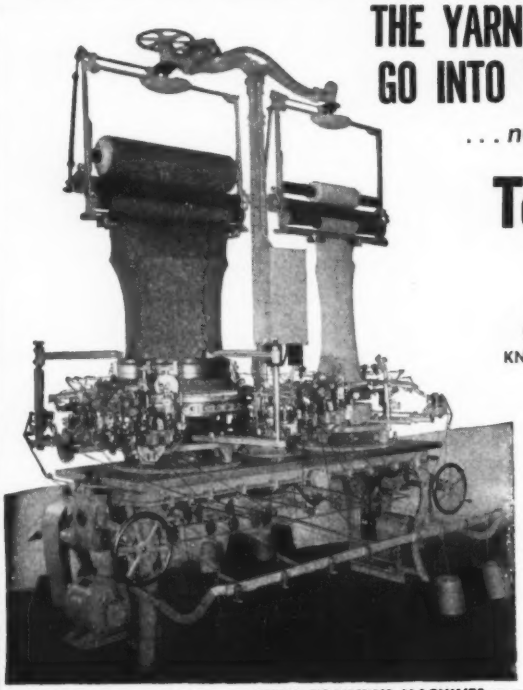
ULTRASONIC EQUIPMENT

BRUSH ELECTRONICS

formerly The Brush Development Co. Brush Electronics Company is an operating unit of Clevite Corporation.



THE YARNS YOU BUY GO INTO THE CLOTH

. . . not into waste!

TOMPKINS D-2

DOUBLE HEAD
SPRING NEEDLE
KNITTING MACHINE

SEE FOR YOURSELF . . . let us show you the Tompkins D-2 in production on whatever yarn or fabric you wish. Want to see samples of finished material? We'll knit up any material you specify — just send us the yarn!

OTHER TOMPKINS MACHINES

BEEF BAG KNITTER · HOCKEY CAP KNITTER · MULTIPLE FEED KNITTER

TOMPKINS BROS. CO. • Syracuse 4, N. Y.

and fabric remains stabilized throughout its life. Onyx Oil & Chemical Co., Warren and Morris Sts., Jersey City, N. J.

Circle D-13 on Reader-Service Card

Wetting Agent

Energetic W-100

. . . a liquid nonionic synthetic detergent, supplied as a 100% active, water-white, almost odorless liquid. Because of good wetting properties and detergency, is suited for dyeing, bleaching, wool scouring, and desizing. Armour & Co., Chicago, Ill.

Circle D-14 on Reader-Service Card

Brown Dye for Wool

National Alizarol Brown DKL

. . . a chrome dye with excellent solubility. Applicable to wool by the top-, meta-, and bottom-chrome methods.

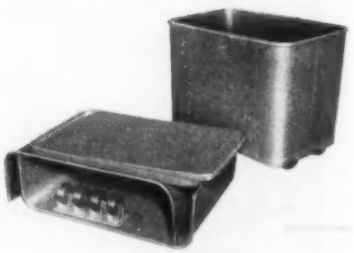
Applied by the top-chrome process, produces medium shades of brown; by the meta-chrome process, a slightly redder shade; and by the bottom-chrome process, a yellower and duller shade. Good fastness to light and very good to excellent fastness to washing, perspiration, cold- and sea-water bleeding, carbonizing, dry-cleaning, and cross dyeing. National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York, N. Y.

Circle D-15 on Reader-Service Card

Textile Equipment News

CONTINUED FROM PAGE 140

Knocked-Down Steel Trucks



TRUCKS are assembled from the knocked-down units by unskilled workers. The trucks carry a five-year guarantee.

A complete line of round-cornered, knocked-down steel floor trucks, designed for use in the textile industry, has been introduced by Kennett Equipment & Machinery Co., Kennett Square, Pa.

Five standard sizes are available:

PROXOL-T

BRINGS

$36,000
EXTRA PROFIT
TO SALES YARN PRODUCER

DO ALL WOOL OILS PERFORM ALIKE? Far from it, as we proved to the complete satisfaction of a well-known sales yarn producer who replaced his former wool oil with Proxol-T. Here are the significant figures on his first year's savings:

$16,000 **INITIAL SAVING**
when competitive oil was replaced by Proxol-T

$20,000 **SAVING**
through increasing yarn yield 1.0%

But Proxol-T did more than increase yarn production and profit in this plant. It provided more uniform roping and better condensing in the carding operation. Oil Shrinkage in spinning was halved and there were fewer ends down.

Have you received a copy of our recently published booklet on Fulling and Scouring Wool Fabrics?

CAN WE HELP YOU?

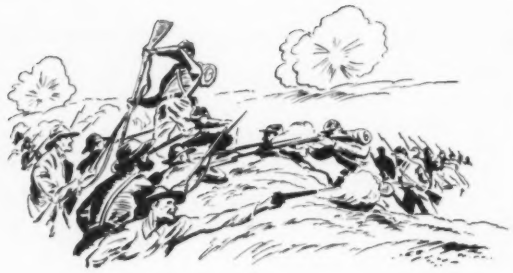
Proxol-T case histories like this are by no means unusual. Your Procter & Gamble salesman can give you other instances of the superior performance records of this efficient wool oil. Talk them over with him—or drop a line to

PROCTER & GAMBLE

TEXTILE FINISHES SALES DEPARTMENT **CINCINNATI 2, OHIO**

Makers of Proxol, Proxol-T, Profine and Kyro AC

1854
R.D COLE
Centennial
1954

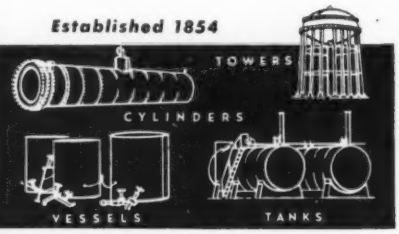


TEN YEARS before the BATTLE OF ATLANTA

IN 1854, ten years before the Battle of Atlanta, we started out as a small iron-works. Many communities and many mills secured their first elevated tanks for water supply from us. For the privilege of celebrating our Centennial, we express our appreciation for the friendship of four generations of customers, and the loyalty of four generations of workers.

R.D. COLE
MANUFACTURING CO.
NEWNAN, GA.

Established 1854



PAGE FENCE - Since 1883
• AMERICA'S FIRST WIRE FENCE •

• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you—

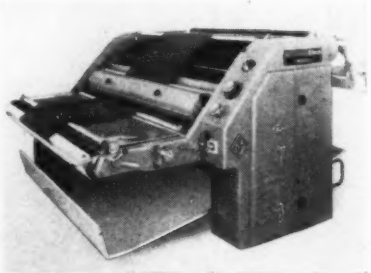
Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

26x22x24, 40x24x24, 42x30x28, 48x 30x28, and 56x22x28 ins. All models feature a rolled top, 18-gauge, cold-rolled steel construction; angle base frames; and channel caster supports. All are equipped with 5-in. roller-bearing steel casters. Additional features are ease of assembly and ease of handling in narrow aisles. Aluminum or stainless-steel construction is available on special order. The trucks carry a five-year guarantee.

Circle T-27 on Reader-Service Card

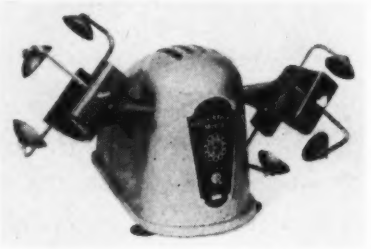
Brushing Machine From Germany



BRUSHING MACHINE has a brush for the back of the cloth, a large steaming apparatus, and a return delivery underneath the machine. Made for single steaming and brushing by Kettling & Braun in Germany, the machine is available in the U. S. through Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

Circle T-28 on Reader-Service Card

Sample Mixer Combines Stirring and Tumbling



LABORATORY MIXER combines stirring and tumbling actions at a precise speed to yield a homogeneous dry mixture. The blender, made by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa., will handle quart jars that can be used for both mixing and storing. Price: $145.

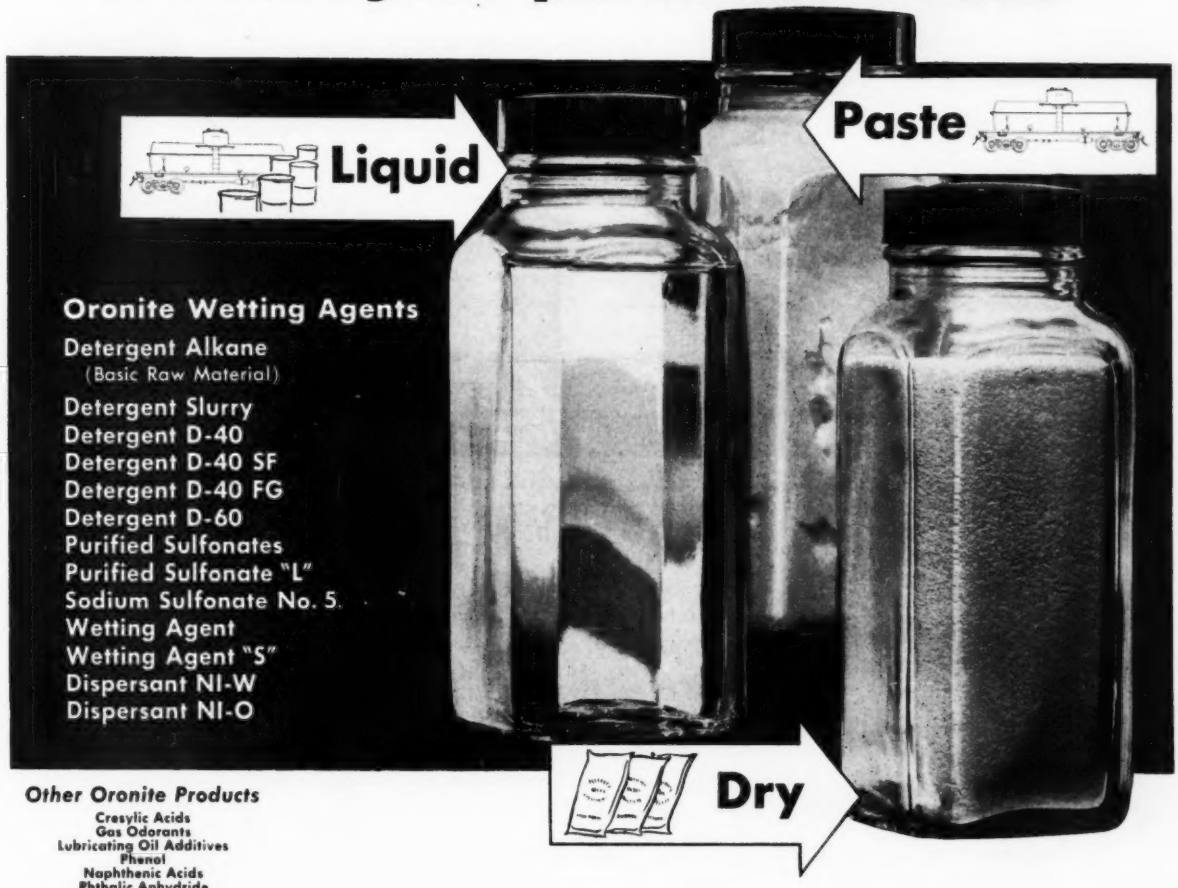
Circle T-29 on Reader-Service Card

Cloth-Strength Tester

For testing fabrics for tensile strength, a new 200-lb.-capacity Electomatic testing machine has been announced by Tinius Olsen Testing Machine Co., 1270 Easton Rd., Wil-

wetting agents

to meet your particular needs



Oronite Wetting Agents

Detergent Alkane
(Basic Raw Material)
Detergent Slurry
Detergent D-40
Detergent D-40 SF
Detergent D-40 FG
Detergent D-60
Purified Sulfonates
Purified Sulfonate "L"
Sodium Sulfonate No. 5
Wetting Agent
Wetting Agent "S"
Dispersant NI-W
Dispersant NI-O

Other Oronite Products

Cresylic Acids
Gas Odorants
Lubricating Oil Additives
Phenol
Naphthenic Acids
Phthalic Anhydride
Maleic Anhydride
Para-Xylene 95%
Ortho-Xylene
Xylol
Aliphatic Acid
Acetone
Hydroformer Catalyst
Dispersant FO
(Furnace Oil Inhibitor)

ORONITE CHEMICAL COMPANY

Whether you require the basic raw material, wetting agents in intermediate form or finished products—it will pay you to investigate the complete Oronite line. Oronite wetting agents are priced competitively and have the high quality and uniformity you expect from the world's largest producer of synthetic detergent raw materials.

Why not talk over your needs with an Oronite detergent specialist? Write or phone the Oronite office nearest you for technical bulletins or request a personal call.

"The world's largest producer of synthetic detergent raw materials"

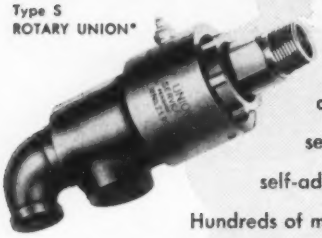
ORONITE CHEMICAL COMPANY

200 Bush St., San Francisco 20, Calif. • 714 W. Olympic Blvd., Los Angeles 15, Calif.
30 Rockefeller Plaza, New York 20, N. Y. • 20 North Wacker Drive, Chicago 6, Ill.
Mercantile Securities Building, Dallas 1, Texas

For more information, write direct or use Reader Service post card.

We Sell Smooth Sealing

Type S
ROTARY UNION*



This rotating steam joint was designed for today's high speeds, high pressures, and quick stops. It has a positive mechanical seal which is self-aligning to stress and self-adjusting to pressure.

Hundreds of mills are standardizing on the ROTARY UNION because their records show that it provides a smoother, longer-lasting seal on their slashers, dry cans, calenders, embossers, and printing machines. Order a set for one of your machines and make your own comparisons. Contact our nearest office . . . or write Dpt. 10W for our catalog.

Now . . . new design permits field repair.

Booth No. 409
Southern Textile Exposition

"Where *Good Connections* Count" ®

* Trade Name—Patented

PERFECTING SERVICE CO.
382 Atando Ave. Charlotte, N. C.
(Home Office & Factory)

Chicago
Cleveland
Providence
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DISPLAY ADVERTISING

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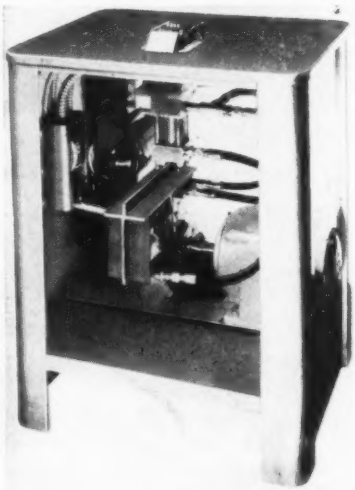
low Grove, Pa. Flexure and compression tests can also be made with the instrument. Eight testing ranges, 0.4 to 200 lbs., are instantly available by flipping the range selector switch. An electronic recorder is mounted in the face of the testing machine, and load and extension are permanently recorded on graph paper. Strain magnifications are 0.5X to 40X. A double-torque-bar weighing system is coupled with the recorder.

Circle T-30 on Reader-Service Card

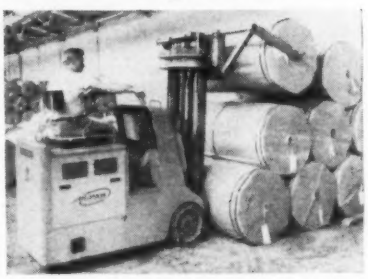
Splicer Speeds Tie Salvage



BALE-TIE SPLICER produces a salvaged band almost as strong as the original band. Made by A. J. Genard & Co., Melrose Park, Ill., the splicer will handle all bands normally used for cotton-bale ties; and it can be used whenever baling operations are necessary.

Circle T-31 on Reader-Service Card

Roll-Handling Device



CRADLE ATTACHMENT, developed by Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio, gives an extra reach to fork trucks for handling rolls in a pile: the cradle arms grip a rod or bar inserted through the core of the roll. Various arm lengths are available.

Circle T-32 on Reader-Service Card

Pumps for Corrosive Service

A new series of centrifugal pumps has been announced by Ampco Metal,

Send for this new booklet on BATCH BLEACHING OF COTTON

Up-to-date review of modern bleaching methods offered by Du Pont—pioneer producer of hydrogen peroxide

Here's an authoritative summary of the batch methods used commercially for bleaching all types of cotton. It takes you step by step through recommended operations and reflects the depth of practical experience that only a pioneer in the field can offer you.

Whatever you bleach—cotton, wool, rayon, synthetics or blends—Du Pont's broad background and technical know-how can help you improve and maintain the efficiency of your operations. Their close, constant contact with all phases of textile bleaching assures you dependable products and services.

You get a *complete* textile bleaching service—from on-the-spot advice on minor problems to a thorough survey of your bleaching operations. And a special service is available to help you in your plant modernization or expansion program.

You get prompt deliveries of high-quality "Albone" hydrogen peroxide from DuPont's modern manufacturing plants located near northern and southern textile centers.

For your copy of our new booklet on batch bleaching of cotton, or for more information about these Du Pont textile services, just clip and mail the coupon below.

COMPREHENSIVE BOOKLET DESCRIBES:

- **Bleaching methods for cotton raw stock, yarn, woven fabrics, knit goods, and hosiery.**
- **Recommended equipment for batch bleaching with peroxides—including a method of adapting iron kiers for handling peroxides.**
- **Methods for testing whiteness of bleached cotton, whiteness retention, fluidity, absorbency, non-cotton content, ash content, and pH.**
- **Bleach bath analysis for temperature, peroxide and alkali content, and pH.**
- **A table of conversion factors for dilute hydrogen peroxide solutions.**
- **Recommended handling and storage of peroxides.**

MAIL THIS COUPON FOR YOUR COPY

ALBONE
REG. U.S. PAT. OFF.
(HYDROGEN PEROXIDE)
"Albone" 35 . . . hydrogen peroxide, 35%
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DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

TW-104

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Dept., Wilmington 98, Delaware

☐ Please send my copy of the new booklet on batch bleaching of cotton.
☐ Please send me more information on textile services available.

*Name*_____ *Position*_____

*Firm*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____

Test moisture content *in 3 seconds* with Moisture Register!

Model PD-1

Model K-2

You get *accurate*, almost instant, moisture content readings in **wool, cotton, rayon, nylon—practically any type of textile—** when you use Moisture Register Model PD-1 or Model K-2.

Either model gives you "on-the-spot" readings with guaranteed accuracy. They're simple to operate, require no technical knowledge or skill, weigh only 6 pounds, easily portable.

Model PD-1 tests textiles in loose or compressed forms with 3" penetration. Model K-2 tests cones, beams, rolls and similar forms.

ONE YEAR GUARANTEE!

Use one of these instruments **FREE** for 10 days. No obligation! Prove for yourself that Moisture Register will help you maintain higher standards, iron out production headaches, add to your reputation as a manufacturer of quality products. Fill out coupon, mail today!

ELECTRONIC MOISTURE REGISTER

MOISTURE REGISTER CO.
1510 W. Chestnut St.,
Dpt. TW, Alhambra, Calif.

☐ **Please send me, *without obligation!* for 10-day free trial,**
Model.....for use on.....
Enclosed find purchase order to cover trial period.

NAME	
TITLE	
COMPANY	
STREET	
CITY	
STATE	

☐ **Please send me information on Moisture Register for use on .....**

Inc., Milwaukee, Wis. The 1,750-rpm., single-suction pumps are available in sizes ranging from fractional flow to 600 gals. per min. Units, available from stock, are constructed from Ampco alloys or nickel chrome alloys and are designed to transfer corrosive liquids. Pump components can be interchanged to fit the requirements of specialized jobs; so special pumps can be supplied from standard units.

Circle T-33 on Reader-Service Card

Semiautomatic Drum Dumper

PORTABLE DRUM DUMPER empties drums or barrels into vats and high-walled vessels. Made by Gifford-Wood Co., Hudson, N. Y., the dumper is controlled by one man at the push-button panel. It can be made to accommodate any size drum and to discharge at any height.

Circle T-34 on Reader-Service Card

Vibrascope Measures Single-Fiber Density

The GFB-DP Vibrascope is a research or production instrument that measures single-fiber linear density or denier by vibrating the weighted fiber at constant frequency. An unskilled operator can obtain linear density, and subsequently average cross-sectional area, on a large, direct-reading, linear, vernier dial in about a minute. Available from G. F. Bush Associates, Princeton, N. J., the instrument can also be supplied with dials calibrated in grex or other units.

Circle T-35 on Reader-Service Card

PACKAGE DYED Nylon YARN

Complete range of shades for all types of requirements for the general textile trade. Nylon Yarns dyed as produced without additional twist. Check with us on your dyed yarn needs for stretch socks.

Jobbers of Natural Acetate & Rayon Yarns

Atlantic Rayon CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I.

NEW YORK REPRESENTATIVE

Empire State Bldg.

Fifth Ave., New York 1

★

These Silentbloc Units Reduce Vibration • Noise • Maintenance

General's Silentbloc rubber-in-metal mounts and bearings can make an important contribution to the efficient operation of your textile machinery. Our mounts can reduce the annoyance and possible damage due to excessive vibration. The greaseless bearings will correct misalignment and absorb shock. *Absolutely no maintenance is required on either bushings or bearings.*

If you're plagued with vibration and maintenance problems why not look into General's products and services? Just fill out the coupon below.

"From Plans to Products in Plastics and Rubber"

THE GENERAL TIRE
Industrial Products Division
WABASH INDIANA

The General Tire & Rubber Company
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☐ Send literature on your Silentbloc products (4240)
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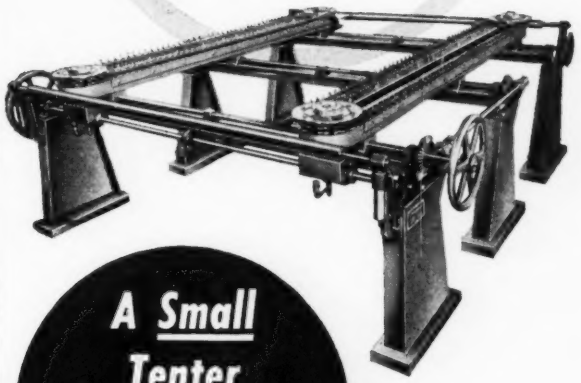
Order M&W TENTERETTES



A Small Tenter For Your Special Needs

M & W Tenterette: 30", 80" or 100" long, using our No. 12 tenter clip. We build to any maximum width, with either straight or hinged rails. Serves many uses.

These short tenters are made *only* by M & W — one of our specialties, developed to answer special needs in many foremost finishing plants.

We can promptly supply full data — advise you how M & W Tenterettes, and other devices like our Constant Tension Batchers, can fill long-felt needs in your plant that no other machinery satisfies. Write today for information on —

√ *Tenterettes*
√ *Constant Tension Batchers*

Ask for details without obligation.

M&W

MARSHALL and WILLIAMS CORPORATION
PROVIDENCE, R. I. • GREENVILLE, S. C. • NEW YORK, N. Y.

Call MILTON for dependable BEAMS

Light Metal featuring continuous welded construction

NYLON & RUBBER YARN BEAMS

FORGED HEADS

RIGID BARRELS

Forged heat-treated aluminum alloy heads and extra heavy wall barrels designed to withstand extreme pressures of monofilament; fine denier; low-turn nylon; and rubber yarns. $13\frac{3}{4}$" and 21" diameter heads.

SECTION BEAMS

Adaptable to all makes of warpers. Cast aluminum alloy heads and extruded aluminum barrels cannot shrink, swell, splinter or distort.

STEEL BARREL
WARP BEAMS
for BROAD, NARROW FABRIC, RIBBON, VELVET AND CARPET LOOMS

BROADLOOM BEAMS

for C & K and Draper Looms

Shown above is Milton's stud construction (also made with cast iron hubs).

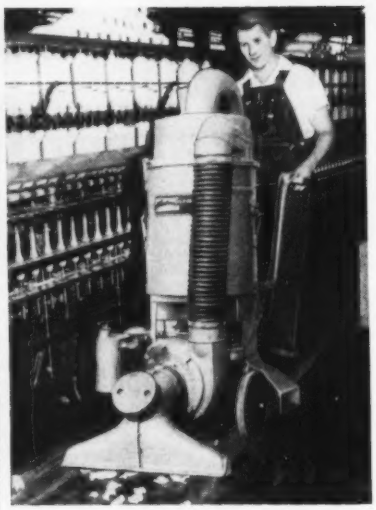
RIBBON LOOM BEAMS

Adjustable head with fixed shaft, or fixed head with removable shaft.

WRITE FOR FREE BULLETINS

MILTON MACHINE WORKS
INCORPORATED
DESIGNERS • ENGINEERS • MANUFACTURERS
MILTON • PENNA.

Textile-Floor Cleaner



BLOWER ATTACHMENT on the Plantman Floormobile, available from Handling Devices Co., Inc., 43 Pearl St., Brookline 46, Mass., adapts the cleaning machine for removing lint and fly from spinning- and weave-room floors and under machines.

Circle T-36 on Reader-Service Card

USEFUL ACCESSORIES FOR THE TEXTILE MILL

Flexible Coupling

A coupling with gear teeth cut on a segment of a sphere is available from Philadelphia Gear Works, Erie Ave. and G St., Philadelphia 34, Pa. When misalignment occurs, the curved tooth maintains a constant area of contact with the internal tooth. Standard sizes: 0 to 6. (T-37)

Diaphragm Valves

A large port capacity, which permits the use of small piping with a low pressure drop, and connections that are reusable are the features of the X-V Series of diaphragm valves announced by Farris Flexible Valve Corp., Palisades Park, N. J. (T-38)

Motor Restarter

To minimize disconnections caused by voltage failure, Crouse-Hinds Co., Syracuse, New York, has introduced a time-delay, push-button station that restarts motors automatically. The device can be set for 2, 4, or 6 secs. (T-39)

Time-Delay Relay

The MEK-2110, made by Machinery Electrification, Inc., Northboro, Mass., is an electronic time-delay relay. Two timing ranges are available: 1.5 to 120 secs. or 0.75 to 60 secs. Load contacts are rated at 5 amps., 115 v., a.c. Accuracy is ± 2%. (T-40)

Hydraulic Control Valves

Eight new hydraulic control valves with ball detent for position locking have been anounced by Logansport Machine Co., Inc., Logansport, Ind. Included are

LIFTS DIRT ... HOLDS IT OFF...

CINDET

100% ACTIVE 100% SAFE!

NEW LIQUID SYNTHETIC DETERGENT

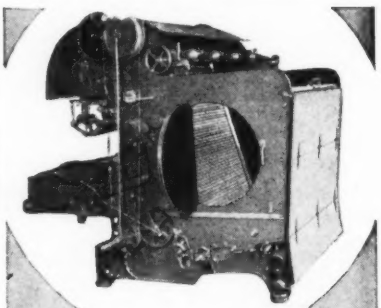
CINDET can be used *in hard or soft water* for cleaning needs throughout your school or college buildings. It LOOSENS dirt quickly, LIFTING IT AWAY AND HOLDING IT IN SUSPENSION in a mass of creamy suds. Removes stubborn stains, rubber marks.

CINDET works fast, dries quickly, can be used safely on *anything water itself won't harm.*

Write for Dolge literature on CINDET, and see your DOLGE SERVICE MAN.

FOR FREE SANITARY SURVEY OF YOUR BUILDINGS, CONSULT YOUR DOLGE SERVICE MAN

dependable DOLGE
WESTPORT, CONNECTICUT



Specify Harwood Aprons for BRAMWELL® FEEDERS

Geo. S. HARWOOD & Son
50 Lagrange St., Worcester 8, Mass.

mounted or Type C face mounting. All

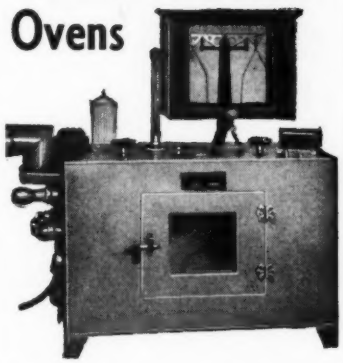
ADEQUATE PLANT PROTECTION begins with a Stewart fence

Don't be half safe — while you're at it, get complete protection. It could save you many thousands of dollars and countless hours of lost production. Plant protection is our business, so talk it over with Stewart. We produce many products designed for this purpose. For example: chain link wire and iron picket fence; wire window guards; wire mesh partitions; steel folding gates, and skylight guards. Also, all-steel settees, steel flagpoles, bronze plaques and other items. Stewart literature gives you the whole story. Write for it today.

THE STEWART IRON WORKS CO., INC.
2110 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications since 1886

Stewart IRON and WIRE FENCES

Textile Testing Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼" both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work. Write for details on EMERSON OVENS to fit your process.

EMERSON APPARATUS CO.
177 Tremont St. Melrose 76, Mass.

six three-position, four-way valves and two two-position, four- and three-way valves. (T-41)

Fire Extinguisher

With a thumb-button trigger and 35-ft. range, a new dry-chemical extinguisher, made by Randolph Laboratories, Inc., 8 E. Kinzie St., Chicago, Ill., is available in 6-, 12-, 20- and 30-lb. sizes and can stop large oil and gasoline fires in seconds. (T-42)

Glass-Surfaced Structures

The Harvestore, a glass-surfaced-steel storage structure, has been announced by Sprout, Waldron & Co., Inc., Muncy, Pa. The Harvestore is constructed of curved plate sections bolted and sealed together. Tools, jacks, and a superintendent of erection are furnished by Sprout, Waldron. (T-43)

180° Conveyor Curve

A live-roller conveyor unit with a 180° curve, power driven and designed for horizontal operation, has been developed by Alvey Conveyor Mfg. Co., 9301 Olive St. Rd., St. Louis 24, Mo. The new power curve units will be available with 30°, 45°, 90°, or 180° of total travel. (T-44)

Acidproof Concrete

An acidproof concrete for floors, tanks, vats, drains, etc. in corrosive locations is available from Savereisen Cements Co., Pittsburgh, Pa. The quick-setting concrete can be poured into place and leveled off as desired. (T-45)

Bronze Electrode

A Bronzochrom electrode, EutecTrode 1850, has been developed for high-strength joining and for frictional and corrosion resistance on a variety of base metals by Eutectic Welding Alloys Corp., 40-40 172nd St., Flushing, N. Y. (T-46)

Hydraulic Pallet Truck

A lightweight hydraulic pallet truck for use with single- and double-face pallets and skid platforms has been announced by Lewis-Shepard Products, Inc., Watertown, Mass. It will carry 2,000-lb. loads with a minimum of dead weight. (T-47)

Cafeteria Tables

Cafeteria tables that fold against the wall are available from Haldeman-Langford Mfg. Co., St. Paul, Minn. Another model folds up for rolling out of the way. (T-48)

Nonclogging Broom

A sponge-rubber broom for sweeping wastes that tend to mat and clog in fiber brooms is available from Para Mat and Rubber Co., 4 Henrietta St., Garfield, N. J. The broom is constructed with flat strips of sponge rubber fixed in an aluminum base. A 16-in. broom costs $4.95; a 12-in. broom, $4.50. (T-49)

Magnetic Brakes

Motor-mounted magnetic brakes are available on motors in NEMA 42 frames from Doerr Electric Corp., Cedarburg, Wis. The brake motors are open or enclosed, single or three phase, foot

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PIPE TOOLS

mounted or Type C face mounting. All motors are equipped with prelubricated ball bearings. Torque rating is 1 ft.-lbs. to 6 in.-lbs. (T-50)

Brakes for Small Motors

Magnetic disk brakes for rerated NEMA-frame motors are available from Stearns Magnetic, Inc., Milwaukee 46, Wis. Series 40 is for 1/20 to ¼ hp., frames 42-C and 48-C; torque range is 1 to 6 ft.-lbs. Series 50 is for 56-C and 66-C frames, 1/6 to 2 hp.; torque ratings, 1¼, 3, 6, and 9 ft.-lbs. (T-51)

File-Drawer Divider

A self-adjusting divider for file drawers has been announced by Remington Rand Inc., 315 Fourth Ave., New York 10, N. Y. The dividers tilt to form a filing V and are self-adjusting when additional material is placed in the drawer. (T-52)

Flooring

Development of an improved oil- and grease-resistant flooring has been announced by United Laboratories, Inc., 16,801 Euclid Ave., Cleveland, Ohio. Known as Sylox, the product is a type of oxychloride cement, which requires no outside ingredients. (T-53)

Redesigned Joint

The self-supporting Johnson joint, Series 2,000, Type S, for admitting steam or other fluids into the rotating rolls and cylinders of textile machines, has been redesigned by Johnson Corp., Three Rivers, Mich. The self-lubricating carbon graphite seal rings' effective thickness has been increased, with an average of 25% longer life. (T-54)

Hydraulic Couplings

Reusable high-pressure hydraulic couplings requiring no special tools for hose assemblies are now being offered by Condamatic Co., Inc., 332 W. 21st St., New York, N. Y. Condamatic also announces the introduction of a new 90° swivel elbow. Both fixed and swivel-male end couplings are available. (T-55)

Heat Recorder

Fast, continuous measurement and control of rate-of-heat input or output is possible with the use of the new Dynamaster BTU recorder-controller systems announced by Bristol Co., Waterbury, Conn. The systems can be used for process vessels, refrigerating plants, air conditioners, and other heat-exchanging devices. (T-56)

Thermostatic Device

Arcing, the main cause of contact failure in mercury-in-glass thermostats, can be eliminated with an electronic device called the Princo Stat-Varistor, a new product announced by Prevision Thermometer & Instrument Co., 1434 Brandywine St., Philadelphia 30, Pa. (T-57)

Small Copying Machine

A small, low-priced copying machine has been introduced by Ozalid, a division of General Aniline & Film Corp., Johnson City, N. Y. The machine will copy anything that is written, typed, printed, or drawn on a sheet of translucent paper

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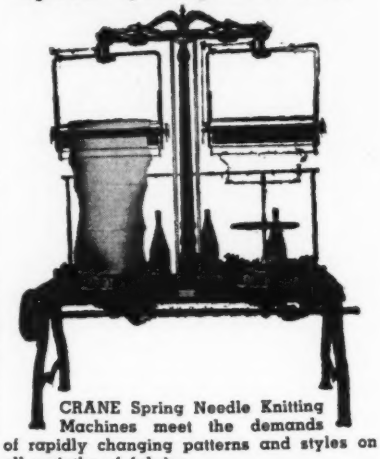

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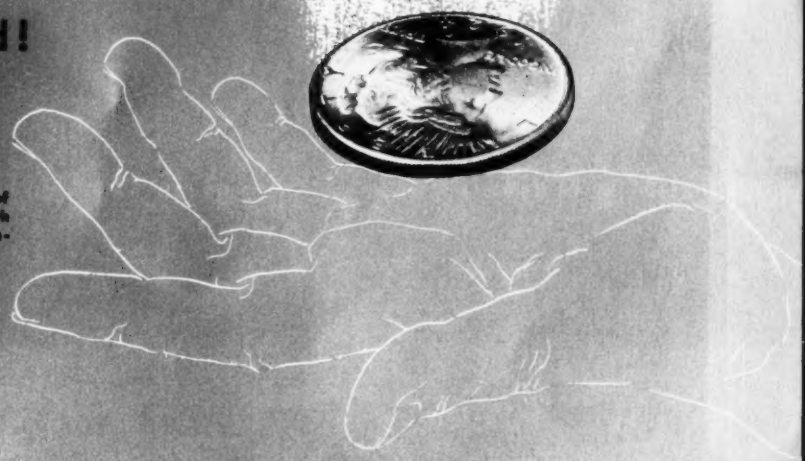

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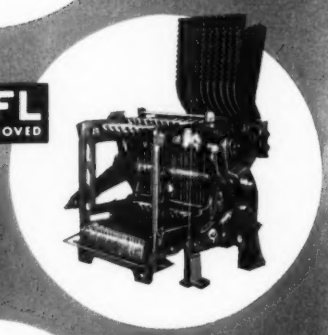

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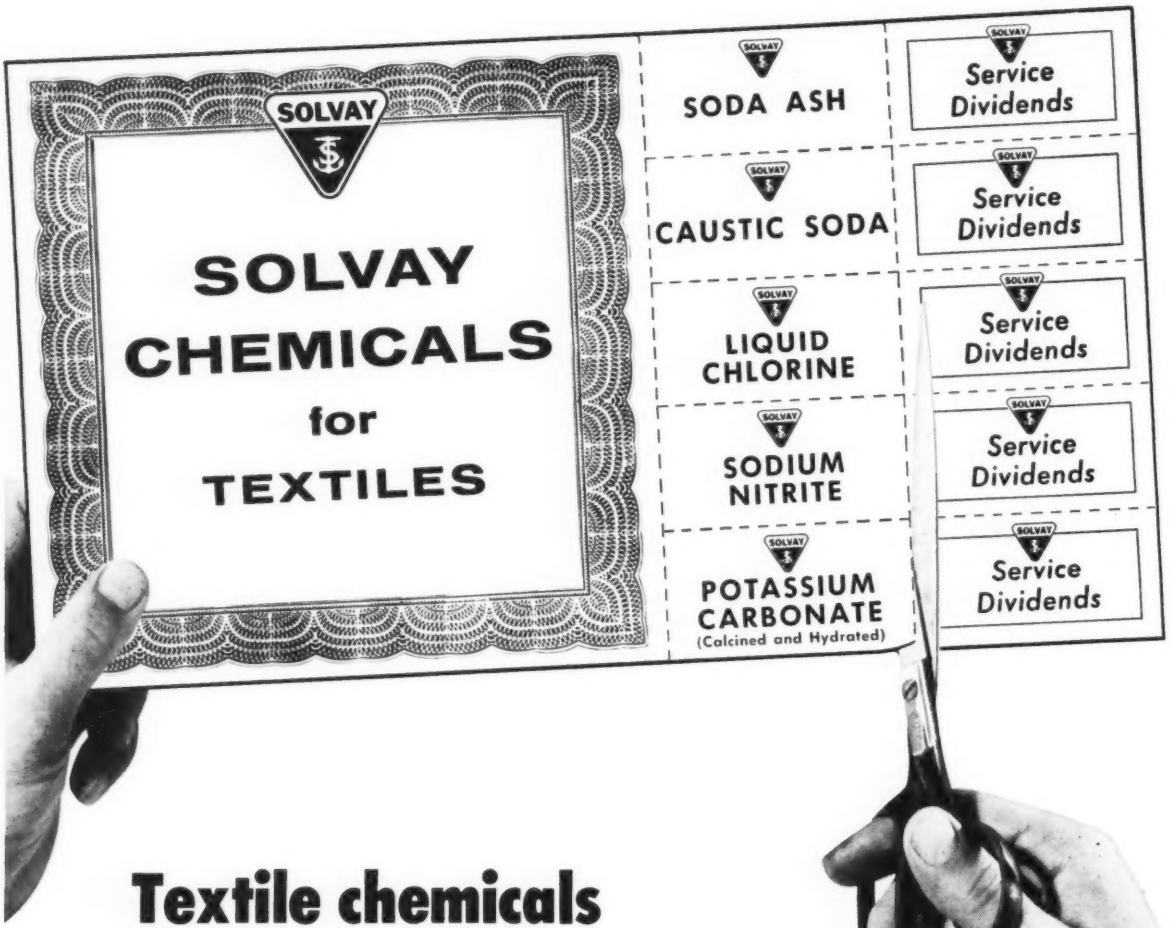

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The Textile Section of SOLVAY's Technical Service can offer services not ordinarily available because:

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up to 9 ins. wide, any length. Cost is $325. (T-58)

Vacuum-Blower Machine

A vacuum-blower cleaning machine with a detachable, portable power head has been developed by Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn. (T-59)

Need a Siren?

Air-raid, fire, and other types of signals, including signals for industrial departments, are produced by a new compact siren that has a powerful, distinctive signal. The siren motor is rated at ½ hp. at 10,000 rpm. (T-60)

Anthracite Burner

An anthracite burner to convert steam and hot-water boilers to automatic firing has been developed by Electric Furnace-Man, Inc., Emmaus, Pa. The burners, which take rice-or barley-size coal, increase output at least 15%. (T-61)

Twist Multipliers

CONTINUED FROM PAGE 107

cotton. A section from a typical curve is shown in Fig. 3. In all cases, the best curve was fitted to the points by inspection; then the maximum point was selected.

When the length-fineness product was plotted against $(TM)_m$ for all cottons, the relationship was not good. One possible explanation was that the fiber fineness, as measured by the Arealometer, was not contributing equally with length in the twist relationship. However, the theory was based on simple assumptions concerning fiber properties, and some of the properties that were omitted for simplicity may be important here.

Various empirical combinations of length and fineness were tested, and the best fit was found when the product of the length times the square root of fineness was plotted against $(TM)_m$. This curve is shown in Fig. 4. Apparently, the curve levels off at a twist multiplier of about 3.65 and an $L\sqrt{A}$ product of about 24. From the data presented here, a twist multiplier of 3.65 is about the lowest one that can be used to give maximum strength.

Further investigation is being made on the deviations of actual $(TM)_m$ from the predictions by Sullivan. It appears that at least two factors are contributing to the deviation: the irregularity of twist along the yarn axis and the asymmetrical shape of the twist-strength curve. A large section of a twist-strength curve is shown in Fig. 5, and the asymmetry is obvious.

A major question is the relationship between yarn number and $(TM)_m$. Some investigations have indicated that the square-root relationship may not be correct. A check was made at this laboratory on 16s, 22s, 30s, 42s, 62s, and 72s yarn made from the same cotton; and Fig. 6 is a graph of the twist curves for these yarn numbers. For practical purposes, the square-root law may be used satisfactorily.

With the twist chart developed here, two fiber properties, length and fineness, are used in determining the twist that will produce maximum skein strength.

From Sullivan's theory of yarn strength, such factors as fiber strength, fiber friction, and crimp might be expected to influence $(TM)_m$. But from the data presented here, it appears that factors other than length and fineness vary between narrow limits or are closely related to the length times the square root of the fineness product for commercial cottons.

The twist guide may be used as shown as a processing guide for present commercial cottons. As new varieties come into production, and significant fiber properties other than length and fineness are measured, the length-fineness relationship may have to be modified.

The authors wish to express their appreciation to H. D. Narker and D. M. Simpson for their helpful comments, and they wish to acknowledge the assistance of Herbert Hutchens of this laboratory for the mechanical processing and physical testing of all yarns used in the study.

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Machinery Maintenance

CONTINUED FROM PAGE 127

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Spinning frames are lined and leveled and spindles plumbed once a year. Rolls are scoured once a year on both Roth systems and twice a year on the Shaw system. Our aver-

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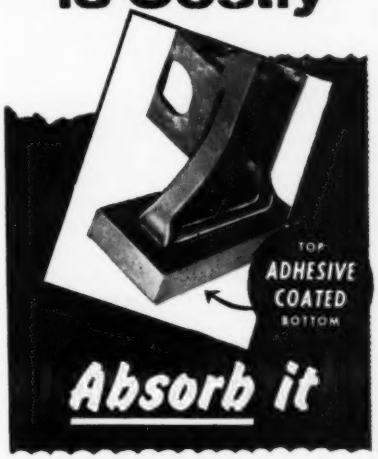

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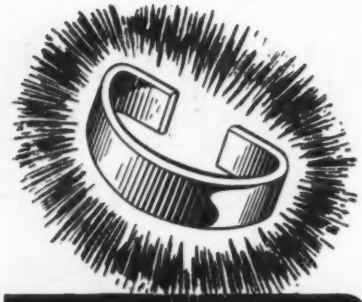

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CRAWFORD RHYMER, BOX 2261, GREENVILLE, S. C.

age apron life is three years on leather aprons. Travelers are changed every 120 hrs. on warp and every 480 hrs. on filling. Warp rings last about four years, and filling rings last three or four times as long as warp rings. We use only one side. At present we are having the second side repolished on a trial basis by a new system that looks very good. We use three full-time overhaulers to do lining, leveling, and spindle plumbing and provide extra help for roll scouring.

There are several big tasks the shop has done and is doing for the spinner. One of these jobs is renecking steel rolls with a special high-tensile steel. We formerly used a fairly good steel that didn't last very long. Now we have found that a more expensive steel does the job the first time and we are through with it.

At present we are working over all of our scavenger-roll hangers. These are the small cast-iron supports for the scavenger roll. Some were so worn on the pin that held them to the side of the roll stand that they soon stopped turning when the scavenger roll had a lap on the end next to the stand. The drafted stock spilled out onto the adjoining end, lapped around the top or bottom roll, made a bung-up, caused extra ends to come down, and put more slubs and gouts into the work.

Now we weld new metal in the bearing hole, fill the groove that holds the scavenger-roll pin, and cool this at once in a box of flaked asbestos. The cooling is important. After cooling, the bearing is dressed on a grinder, drilled in a homemade jig, and slotted in another homemade jig that holds it in the correct position.

These two jigs have been a lot of help. The work is done on the spare time of a shop man and costs comparatively little. We had a number to do, but we have almost got around at present. New parts were possible, but the cost was excessive compared with reworking. We could find no one who did this work; so we did it ourselves and saved a lot of dough.

Our lay-motion worm-gear shafts on the warp spinning frames are being rebuilt by our shop to take out excess play. We bore out the stand and make the shaft oversize to fit one a day.

SPOOLING AND WARPING

We use an outside service in this department twice a year to check over all our machines. One man on the first shift is assigned upkeep of knotter heads, and the other two fixers split responsibility for various other subassembly units. We are working out a checklist for this department, but it is not ready yet. The manufacturer's repair parts are as expensive as parts for a fine watch, but we feel that it is less expensive to continue their use than to engage in large-scale rebuilding and use of self-repaired parts. Needless to say, we get the full dollar value out of each part before discarding it. We repair only what we can adequately repair.

We use a price list from the manufacturer to figure cost of every part ordered.

SLASHING

Our check system will be applied here but is not installed yet. We do use fixer responsibility for each machine. The manufacturer's schedule of lubrication is followed closely, and we have no great troubles here. We are equipped with five Uxbridge slashers, and when they were installed, adequate bearing control was also made mandatory. Our shop men designed and built a beautiful loom-beam drive with ball-bearing-mounted universal lathe chucks, which securely grasp and center the beam and run true up to winding speeds of more than 100 yds. per min.

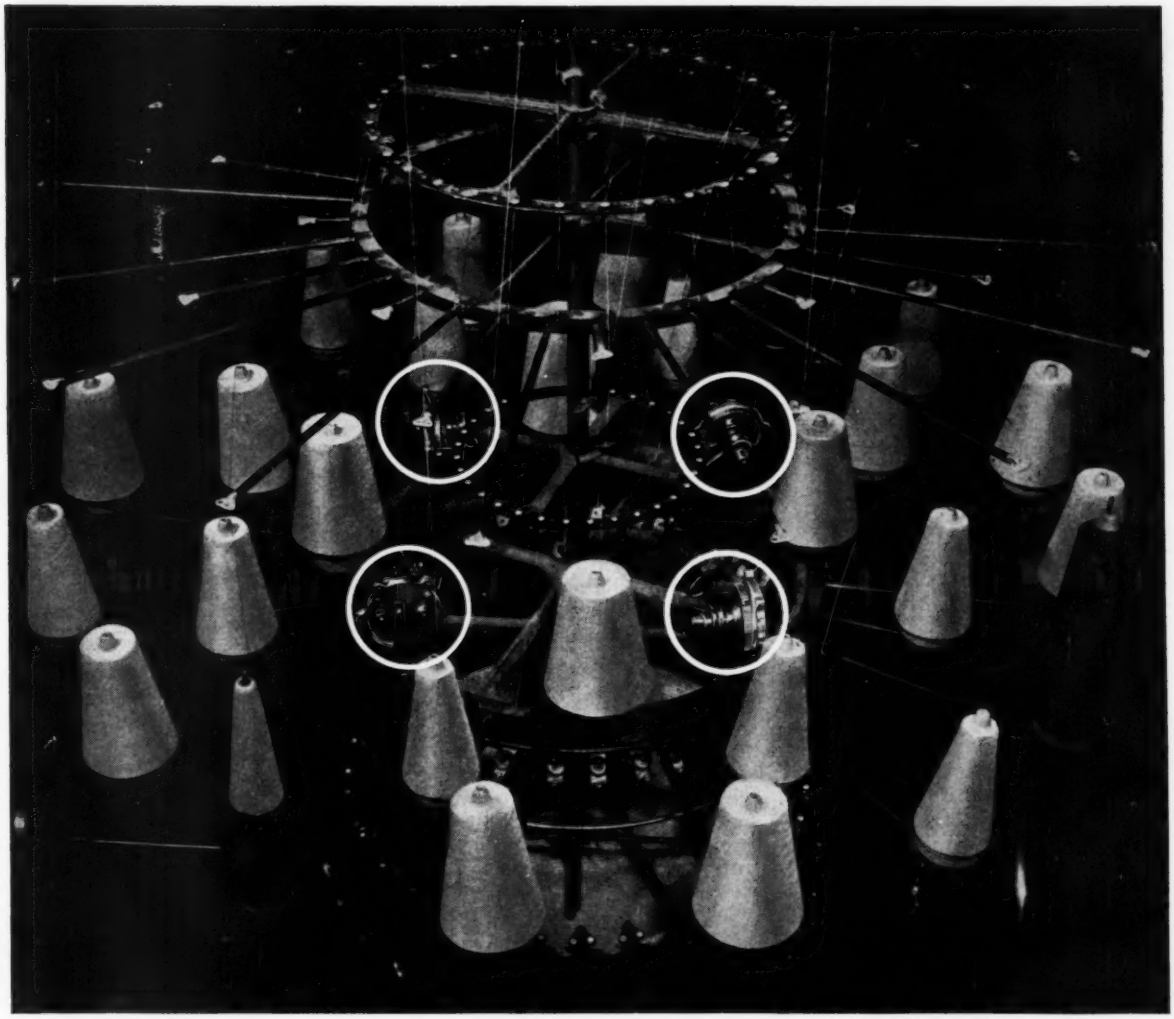
WEAVING

Here again we have a checklist system for thoroughly checking our looms. This list includes pickers and binders, box fronts and backs, low lugs, shuttle, let-off and take-up, brakes and loom speed, thread cutter, filling knife, parallel blocks, Pittman arms, rocker shaft and swords, lay guides and lay leather, picker sticks, temple leather bumpers, filling fork and grates, picker-stick bumpers, leather under whiproll, leather under harness roll, harness cams set 2½ in., whiproll setting, and protector-rod bearing.

Each of these items is checked on one loom per shift by the loomfixer, who uses the list and checks each item off in turn. The list is then picked up by the assistant overseer, who checks the fixer's work. Each man signs the card, which is then filed with the overseer, who, of course, makes spot checks.

As is customary in all shops, a great deal of work is done for the weave room. In general, we repair any part that can be repaired for less than the new cost. Some time ago, when our supply costs got too high, we held a series of weekly conferences on what we could do to repair parts and save money. These conferences turned out to be quite an interesting device.

We found our loomfixers were tak-



How rubber yarn is tension-controlled at the Steven Knitting Mills

The Steven Knitting Mills, Inc., of 564 Broadway, New York City, are manufacturers of elastic cloth for outerwear, and they control tension of rubber yarns on their various types of circular knitters with Kidde Standard Tension Compensators. Each of the four rubber ends (the dark cones in the picture) feeds into a Kidde Standard Tension Compensator, where tension is controlled *surely* and *accurately*.

By using Kidde Standard Compensators as tensioning devices for the rubber ends, Steven Knitting Mills, Inc. report the following:

Fabric width is now consistent, puckers in the cloth due to tension variations in the elastic yarns have been eliminated, and the general appearance of the cloth has been greatly improved.

For tensioning rubber yarns, Kidde Standard Tension Compensators will work well with any type of latch needle machine or spring-beard needle machine. They'll help you turn out a better elastic fabric at *less* cost!

More than 500 leading textile mills have put Kidde Compensators to work solving their tension problems. For more information on how Kidde Compensators can help *you*, write Kidde today.

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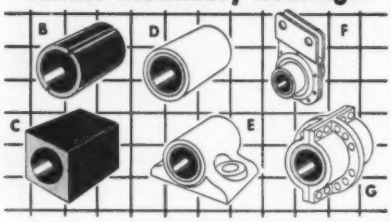

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ing parts to the shop and getting cost estimates of what different shop mechanics would charge them to make the repair. They would first find out the cost of the new part from the supply department and then take the part to the shop for repair. The interest shown was intense, and you would think they were actually spending their own money. We were delighted and went along fully with them in their cost reduction.

We found later that there was a tendency on the part of some fixers to hang around the shop while their parts were repaired. This situation caused the fixer to be off his job too long, slowed down the repair, caused excessive loom downtime, and messed up the shop.

We considered several methods to overcome the difficulty and finally gave the loomfixer an order to the supply department for the part and had him turn in the broken part to the supply man. Now the fixer gets his part on the loom and keeps the loom running with no difficulty. The broken part is kept in a box provided for that weave room's individual use. When enough accumulates to warrant turning over to the repair man, the work is taken to the shop, repaired, and put in another receptacle for the weave room where it came from. The cost of repairing is charged back to that department. In this way, parts are sent back to the same department and reissued without prejudice.

We rebuild loom-beam journals by taking off the heads and cutting off the stud close to the barrel. The shaft protruding from the barrel is bored out and a stud of the proper size pressed in. This extension is then machined to exact size, the barrel is smoothed, and the heads put back on.

When a journal with a wheel, gear, or pulley is worn not more than 0.008 in., we quite often get out the "put-on tool," knurl the shaft, and press on the gear or pulley. Our master mechanic says that in the last four years, not one has come back for being loose. He also uses the knurl for pressing on gears on cold-rolled camshafts. This steel is much cheaper than the usual camshaft steel and lasts as long.

Red-head gears are a problem. We tighten up on our inspection of motor pinions and armatures to cut down wear. When replacement becomes necessary, the blank costs $6 and the work about $3. The manufacturer can sell it for $8 with his new foundry setup; so it's better to buy them.

Remember that when you can repair something for less than the manufacturer can supply it, it will pay you to do so. Otherwise, don't repair.

WILLIAM BUXMAN

It is with deep regret that we announce the death of William Buxman, 70, former advertising sales manager and assistant to the publisher of TEXTILE WORLD, on August 27. Mr. Buxman had retired from TEXTILE WORLD on December 31, 1953, after completing 17 years with the magazine and 45 years with McGraw-Hill Publishing Co., Inc.

Bux, as he was known to his many associates, was named advertising manager of TEXTILE WORLD in 1936. He continued in that capacity until October, 1953, and then served as assistant to the publisher until his retirement.

He joined the Hill Publishing Co. as a member of the staff of *Power* in 1908 and was later appointed manager of *Power* (a position he held on two different occasions). When McGraw-Hill Publishing Co. was organized in 1917, he was appointed manager of *Engineering News-Record*.

Before joining TEXTILE WORLD in 1936, he had also served as manager of *Construction Methods & Equipment* and of the Classified Advertising Dept. and as vice president and general manager of the Catalog Co.

We on the staff of TEXTILE WORLD greatly regret the loss of Bux, who worked so closely with us for so many years; and we know his many friends in the textile industry will be saddened by his sudden passing.

News of the Month

Safety

In a letter congratulating Cone Mills on its safety record for 1953, James P. Mitchell, U. S. Secretary of Labor, commented, "Such an accomplishment demonstrates that accidents on the job can be controlled and should encourage an added effort on the part of other industrial enterprises to improve their safety records." Four Cone plants showed over a 40% reduction in accidents over 1952; one, Tarbardrey Plant, had a whopping 87% reduction.

Facts on New England

A booklet called *The Facts About the New England Cotton and Man-made-Fiber Textile Industry Today* has been released by the Northern Textile Association and The National Association of Cotton Manufacturers in commemoration of the 100th anniversary of the NACM. Facts brought out in the booklet:

- Out of the consumer's dollar, an average of 16.2¢ goes to the textile mills, including dyeing and finishing.
- When New England mills close, workers don't find jobs in other industries. They either find jobs in other textile plants or remain unemployed.
- In eight postwar years, New England mills spent 18% more per worker than the national textile-industry average on new plants and equipment and 37.1% more than the average for all of N. E. industry.
- The wage differential between the average straight-time hourly pay of New England and Southern textile workers is 17¢ per hr., plus an additional 9.7¢ per hr. for fringe benefits.
- Labor accounts for 43% of the cost of producing combed-cotton goods in New England. Raw materials take up 40%, which leaves 17% for all other costs.

Design Protection

At a symposium held in Chicago to discuss the practicality of a law to protect industrial designers, the Secretary of the National Federation of Textiles suggested that, in reference to textiles, any such legislation should: (1) protect only designs that are recognizable to the layman's eye, (2) not require special drawings or technical descriptions, (3) require only one copyright marking per end product, not one per repeat, (4) accept the possibility of the layman's confusion as a basis for conflict in designs, (5) make the copyright period not more than three years, and (6) exempt staple designs.

Mill Developments

► A washable ribbon made of dope-dyed acetate has been developed by the Ribbon Div. of Burlington Mills Corp. The trimming will be made in 10 colors.

► A nonwoven synthetic chamois cloth for household use has been put on the market by Lowndes Products, Inc., Greenville, S. C. The cloth is made of cotton bonded with a Chemigum Latex developed by Goodyear Tire & Rubber Co.

► Play denims in plaids and checks are in production at Cone Mills, Inc.

► A double-knitted cotton-glove fabric with a tight knit, light weight, and soft texture has been developed by Fownes Bros. & Co., Inc.

► A 50-50 blend of Orlon and cashmere is being produced by Einiger Mills, Inc., for use in coats.

► Big news for mills running synthetic fibers came from the fall Paris fashion shows. The high-style Paris designers used more fabrics made from fiber mixtures than ever before. Fashion in this country tends to follow Paris.

► At the end of the summer softball season, an interplant tournament was held by Cone Mills Corp., Greensboro, N. C. Eight teams from Cone-mill towns in central North Carolina participated, and a trophy was awarded to the winner (print works).

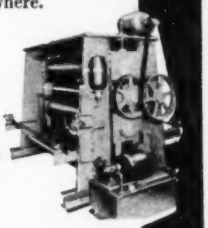
► An Air Force captain has been assigned to spend six months at the Textron plant at Anderson, S. C., to study the mobilization and utilization of the textile industry in case of national emergency.

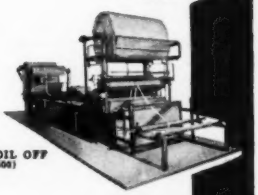
► Two industrial engineers, one company appointed and one union

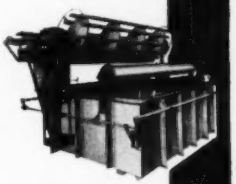
Through 5 These Machines

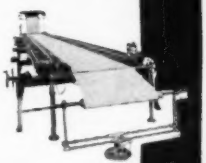
Pass The World's Finest ....Textiles!

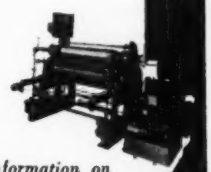
HINNEKENS superior equipment offers unequalled economic and competitive advantages. No name means so much to Textile Dyers and Finishers everywhere.


1 QUICK OPENING HYDRAULIC CALENDER (MODEL NO. 1120)


2 CONTINUOUS BOIL OFF (MODEL NO. 400)


3 DYE BECKS (MODEL NO. 500)


4 TENTERING FRAME (MODEL NO. 900)


5 EMBOSSING MACHINE MODEL NO. 310

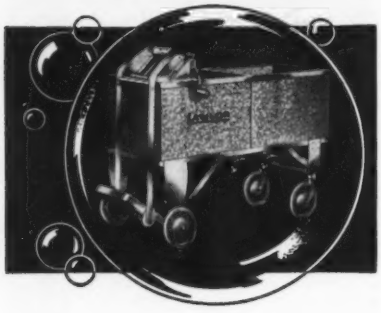
For complete information on this outstanding machinery write for our FREE catalog:

HINNEKENS MACHINE CO. INC. PATERSON N.J.

MACHINE COMPANY, INC.

199-221 GODWIN AVE. PATERSON 1, N. J.

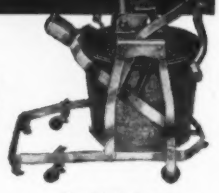
LAWLOR MOPPING TANKS



Lead the Field in RUGGEDNESS and SERVICE

8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • Hand or foot pressure wringers • Perforated roll wringers • Special drain shut-offs • Hot dipped, galvanized chassis and frames • Rubber tired, cadmium plated steel wheels.

LAWLOR MOP WRINGERS



EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together; the foot lever is perfectly balanced.

Copied but never Duplicated!

EASY to move wringer: self-adjusting front casters raise metal feet from floor when you're ready to go.

The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

Write for Catalog of Complete Lawlor Line.

S. C. LAWLOR CO.
Quality Floor Equipment for 50 Years
130 N. Aberdeen St., Chicago 7, Ill

(TWUA) appointed, are trying to find ways to cut costs by 10% at Cluett, Peabody & Co., North Grosvenordale, Conn., in an attempt to keep the plant in operation.

Communications

An editorial feature called "In The Wind," written to provide employees with information on production activities, appears in *Knit Topics*, the house organ published by Ware Knitters, Ware, Mass. A general summary is followed by specific information on each company plant. A sample from the August issue:

"All plants will be very busy for the next two months. Every effort must be made to clean up fall work so that we can get off to a good start on spring production. The spring sample season is now in full swing at Ware.

"Ware—Samples have the green light. Miscellaneous styles, pullovers, and polos will be in regular production.

"Gilbertville—The print shop will continue to be very busy with a variety of printing. Additional people will be added on each shift."

News Briefs

▶ The Wool Bureau has expanded its West Coast operations with the addition of three members to its Los Angeles staff. The Los Angeles branch promotes wool in 17 western states.

▶ A noncommercial, 15-min. film in technicolor, "Your Washable Wardrobe," has been produced by Burlington Mills Corp. and Westinghouse Electric Corp. The film, which covers selection, properties, and washing techniques for synthetic-fiber fabrics, will be lent to civic groups and television stations.

▶ Under a new ruling by the National Labor Relations Board, an employer can question employees about their union affiliations if no reprisal or favoritism is implied.

▶ In a survey of salary compensation, the American Management Association found that administration and technical employees tend to receive similar pay for similar qualifications regardless of the industry, location, or size of company. The highest-paid junior engineer in the survey received 26% more than the lowest-paid one.

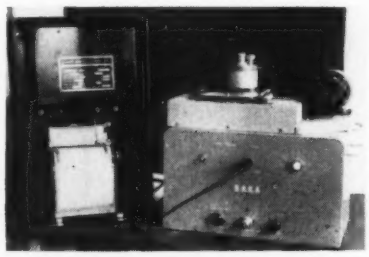
▶ Copies of the survey *Cotton in the Combed Sales Yarn Industry*, are available on request from the National Cotton Council, Box 18, Memphis, Tenn. The survey points out that more research is needed to keep the combed-yarn spinner informed of competition from synthetic-fiber yarns.

▶ Southern organizational activities of the United Textile Workers of America (AFofL) will be concentrated on the Burlington Mills plants instead of being spread out through the

Instruments Developed by British Rayon Research Assn.

FILLING-MARK RECORDER (right), indicates whether cyclic variations in yarn thickness will give an undesirable pattern mark in the woven cloth. The recorder attaches to a standard yarn evenness tester. It has an adjustment for cloth width.

YARN-TENSION RECORDER is used to test the effect of internal shuttle design on filling tension. Yarn-breakage rates and cloth-appearance factors can be studied, and the shuttle can be checked before it is used. The recording instrument is not shown.



CLOTH PROFILE RECORDER was developed to detect variations in thread spacing and yarn height. A delicate feeder moves across the surface of the cloth, and the movement of the feeder is amplified and recorded. Variations can be related to loom settings.

Need help?

on the problems of

- *PRODUCTION*
- *ENGINEERING*
- *MAINTENANCE*
- *RESEARCH*
- *TESTING*
- *QUALITY CONTROL*
- *FIBER IDENTIFICATION*
- *BLENDING*
- *CLOTH CONSTRUCTION*
- *PLANT EXPANSION*
- *MODERNIZATION*
- *PURCHASING, AND RELATED MATTERS*

TEXTILE WORLD'S FACT FILE ISSUE

Can help you solve problems involving any or all of the subjects listed.

The FACT FILE Issue (formerly the Buyers Guide and Reference Data Issue) will again be sent to all TEXTILE WORLD subscribers in mid-November of this year.

Many of the features of last year's issue that were so favorably received have been enlarged and improved in line with Textile World's policy of making every issue as "useful as any machine in the mill."

Be on the lookout for this "Handy Helper."

Watch for this new cover

TEXTILE WORLD

330 West 42nd Street New York 36, N. Y.

THE LOYAL T. IVES COMPANY

SPRING BEARD KNITTING NEEDLES

The Ives Company manufactures all known types of Spring Beard needles — for circular, full-fashioned and tricot knitting machines.

Also, Sliders, Sinkers, Jacks, Guides, Sley Points, Looper Points, Transfer Points or Quills, for Spring Beard and Latch Needle knitting machines.

Complete line, all gauges and styles of Needles, Guides, Sinkers and Sley Points for Reiner, Avisco and Whitin Tricot machines. Also equipped for complete casting and squaring service for Tricot machines.

NEW BRUNSWICK NEW JERSEY

entire South, according to Anthony Valente, president of the union.

►A shopping guide for motorists called *Tour and Shop* offers free listings of mill stores that sell to the public. To get a mill store listed in the guide, write: Tour and Shop, 1715 Walnut St., Philadelphia 3, Pa.

►To encourage North Carolina farmers and ginners to produce cotton of the highest quality, the North Carolina Cotton Quality Improvement Committee was recently formed. C. A. Cannon of the N. C. Textile Manufacturers Association is chairman of the committee.

►Carpets made of Tufton can carry a label of Tufton quality if the carpets meet the fiber and construction standards set up by American Viscose Corp. Testing will be done by an independent laboratory, and no royalties are involved.

Economic Notes

►A good second half of the year for rugs and carpets was recently predicted by James R. Dolan of C. H. Masland & Sons, Inc. Floor-covering sales have, historically, closely followed disposable income and kept pace with new home building. Both of these bellwether factors are in good shape.

►"Textile mills as a whole have, right now, substantial excess potential capacity," said Marvin R. Cross, president of Greenwood Mills, Inc., in a radio broadcast. "But the idea of excess capacity in terms of too much equipment and too many plants is erroneous. Capacity must be greater than average demand if the needs of boom periods and emergencies are to be met."

►In a letter to stockholders, Thomas H. West, president of Draper Corp., commented that prospects for the textile industry during the second half of the year are beclouded. "While there is a distinct feeling of optimism in the trade, this optimism will have to be backed up by increased hours of mill operations."

►The pension plan that has covered unionized full-fashioned-hosiery workers for five years expired August 31 and was not renewed by agreement between American Federation of Hosiery Workers (AFofL) and Full-Fashioned Manufacturers Association of America. Poor business conditions were given as the reason.

►According to a study of the acetate demand curve, as reflected by shipments of acetate filament and staple to manufacturing plants, by the Institute of Trend Research, Hopkinton, N. H., the demand for acetate will rise to a seasonal peak in the last part of this year, but then it will decline through much of 1955. During 1956, acetate shipment will turn upwards again.

Hosiery Convention

• At the opening of the Southern Hosiery Manufacturers Convention in Roanoke, Va., F. F. Eaves, vice president of Athens Hosiery Mills, Athens, Tenn., said that modernization is the best way to keep manufacturing costs low. People displaced by modernization should be retrained for other jobs in the mill.

• Three tips on setting up a quality-control program were given by J. H. Rice, production manager of Virginia Maid Hosiery Mills, Pulaski, Va.:

1. Define specifically what is substandard quality.
2. Get the supervisory force to apply measures to reduce waste.
3. Trace unsatisfactory machine performance to the individual employee and take action there.

WHAT'S HE SHOOTING? Dancing snakes? Enlarged worms? Broken golf clubs? Not at all. It's corroded electrical conduit, and the photographer is Michael London, TW assistant editor, getting a story.

This assignment was at Mount Holly, N. C., where Mike dug into the facts on American & Efird Mills' finishing division's electrical-distribution system. (See p. 104.) When he wanted a photo of the rusted-out conduit that has been replaced with flexible, liquid-tight conduit, Maintenance Chief Jim Coe resurrected a couple of lengths from the junk pile.

Textile Calendar

1954

October

American Society for Quality Control, Carolinas Sect., School of Textiles, N. C., State College, Raleigh, N. C., Oct. 1.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Oct. 1.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 8.

American Institute of Electrical Engineers, Middle Eastern Dist. meeting, textile session, Abraham Lincoln Hotel, Reading, Pa., Oct. 6.

Chemical Finishing Conference, National Cotton Council, Statler Hotel, Washington, D. C., Oct. 7 and 8.

AATCC, Northern New England Sect., Colonial Country Club, Lynfield, Mass., Oct. 8.

AATCC, Rhode Island Sect., Dummocks Grille, Providence, R. I., Oct. 14.

N. C. Textile Mfg. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 14 and 15.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., Oct. 15.

AATCC, Piedmont Sect., annual meeting, Hotel Barringer, Charlotte, N. C., Oct 16.

Lubrication Conference, sponsored by American Society of Mechanical Engineers and American Society of Lubrication Engineers, Lord Baltimore Hotel, Baltimore, Md., Oct. 18 and 19.

National Safety Congress and Exposition, industrial sessions, Conrad Hilton, Congress, Morrison, and La Salle hotels, Chicago, Ill., Oct. 18 to 22.

National Assn. of Suggestion Systems, Drake Hotel, Chicago, Ill., Oct. 18 and 19.

ASTM, Committee D13, Sheraton Park Hotel, Washington, D. C., Oct. 19 to 22.

American Society for Quality Control, Textile Div., meeting and New England Conference, Ten Eyck Hotel, Albany, N. Y., Oct. 21 to 23.

Textile Operating Executives of Georgia, slashing and weaving, A. French Textile School, Georgia Tech, Atlanta, Ga., Oct. 23.

AATCC, Philadelphia Sect., Penn-Sherwood Hotel, Philadelphia, Pa., Oct. 29.

November

Middle Atlantic Textile Conference, American Institute of Electrical Engineers, Textile Subcommittee, N. C. State College, Raleigh, N. C., Nov. 4 and 5.

Carded Yarn Assn., annual convention, Atlanta, Ga., Nov. 11 and 12.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 12.

Symposium on Intrinsic Fiber Properties, Polymer Research Institute, Brooklyn Polytechnic Institute, Brooklyn, N. Y., Nov. 13.

Occupational Vision Workshop, Southern Occupational Vision Council, Georgia Tech, Atlanta, Ga., Nov. 18.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., Nov. 19.

December

AATCC, Rhode Island Sect., annual meeting, Sheraton Biltmore Hotel, Providence, R. I., Dec. 2.

National Exposition of Power and Mechanical Engineering, Commercial Museum, Philadelphia, Pa., Dec. 2 to 7.

AATCC, Philadelphia Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 3.

AATCC, South Central Sect., Hotel Patten, Chattanooga, Tenn., Dec. 4 .

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 10.

AATCC, Northern New England Sect., Woodland Golf Club, Auburndale, Mass., Dec. 10.

Symposium on Fiber-Form Factors, Polymer Research Institute, Brooklyn Polytechnic Institute, Brooklyn, N. Y., Dec. 11.

AATCC, Southeastern Sect., Biltmore Hotel, Atlanta, Ga., Dec. 11.

1955

January

Symposium on Fiber Interactions, Polymer Research Institute, Brooklyn Polytechnic Institute, Brooklyn, Jan. 8.

International Heating and Ventilating Exposition, Convention Hall, Philadelphia, Pa., Jan. 24 to 28.

American Society for Quality Control, Textile Div., annual meeting, Clemson College School of Textiles, Clemson, S. C., Jan. 27 to 29.

AATCC, New York Sect., Hotel Statler, New York, N. Y., Jan. 28.

February

Symposium on Blend Engineering, Polymer Research Institute, Brooklyn Polytechnic Institute, Brooklyn, N. Y., Feb. 5.

Cotton Research Clinic, sponsored by National Cotton Council, Pinehurst, N. C., Feb. 16 to 18.

AATCC, New York Sect., Hotel Statler, New York, N. Y., Feb. 25.

March

Symposium on Fiber-Yarn-Fabric Relationships, Polymer Research Institute, Brooklyn Polytechnic Institute, Brooklyn, N. Y., March 5.

Textile Research Institute, annual meeting, Hotel Commodore, New York City, N. Y., March 10 and 11.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., March 18.

American Cotton Manufacturers Institute, annual meeting, Biltmore Hotel, Palm Beach, Fla., March 31 to April 2.

April

Symposium on Textile Research, Polymer Research Institute, Brooklyn Polytechnic Institute, Brooklyn, N. Y., April 2.

Alabama Cotton Manufacturers Assn., 50th Anniversary meeting, Biloxi, Miss., April 13 to 15.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 22.

Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., April 25 to 29.

May

The Fiber Society, spring meeting, School of Textiles, Alabama Polytechnic Institute, Auburn, Ala., May 4 and 5.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 2.

June

Southern Textile Association, annual convention, Mayview Manor, Blowing Rock, N. C., June 16 to 18.

Materials Handling Exposition, International Amphitheatre, Chicago, Ill., June 16 to 20.

International Textile Exhibition, Brussels, Belgium, June 25 to July 10.

September

The Fiber Society, fall meeting, Mass. Institute of Technology, Cambridge, Mass., Sept. 8 and 9.

AATCC, national convention, Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 21 to 23.

NEW

Allenpoint

Set Screws

WITH SCIENTIFICALLY-DESIGNED SMALLER CUP POINTS

Smooth, deep point penetration for greater holding power and resistance to vibration; precision formed threads and accurate thread lead for maximum locking action. Comparative tests by leading laboratory prove Allen Set Screws unmatched in performance. Write to Advertising Department for Bulletin C-33A.

When ordering through your local industrial distributor, specify Genuine Allenpoint Set Screws.

ALLEN

MANUFACTURING COMPANY

Hartford 2, Connecticut, U.S.A.

Desize with EXSIZE -T*

For reliable, efficient, economical preparation of cloth prior to bleaching, dyeing, printing and special finishing, depend on EXSIZE-T.

Let us help solve your desizing problem.

Send for free sample and data.

PABST BREWERIES*

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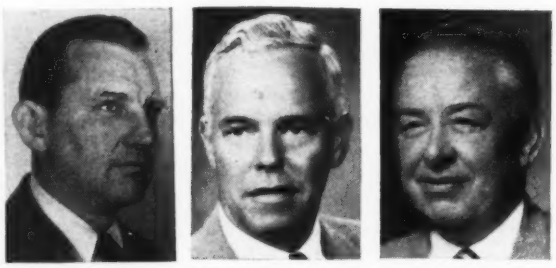
221 N. La Salle Street
Chicago 1, Illinois

*Registered trademarks of Pabst Brewing Company

NEWS ABOUT Suppliers

ALLIANCE COLOR & CHEMICAL CO., Newark, N. J., & **BLACKMAN-UHLER CO.**, Spartanburg, S. C.—Announcement has been made of the merger of these two companies and their affiliates, Blackman-Uhler Mfg. Co. and Alliance Chemical Corp. New company will be known as Andover Co. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Dr. Robert P. Parker named director of research at Pearl River Laboratories, Pearl River, N. Y.; Dr. Joseph H. Paden named director of laboratories, and Dr. Mario Scalera director of research at the Bound Brook Laboratories, Bound Brook, N. J.; Dr. J. C. Pullman named manager of technical service for the Petrochemicals Dept.; Dr. V. E. Wellman named to head sales department of the Petrochemicals Dept., assisted by Dr. A. J. Weith, George C. Voss, and Frank W. Miner. . . . **AMERICAN ENKA CORP.**, Enka, N. C.—Has let construction contract for new $1,000,000 research building adjoining its rayon plant. . . . **AMERICAN VISCOSE CORP.**, Roanoke, Va.—Stewart N. Lawrence named supervisor of converting operations. At Marcus Hook, Pa., Dr. M. T. O'Shaugnessy named leader of the Viscose Research Section, and Joseph E. Ross named head of Experimental Spinning. . . . **ATLAS POWDER CO.**, Wilmington, Del.—Richard D. Fine, Edward M. Simon, Jr.,



HENRY F. CREEGAN (left) has been named sales manager of the Textile Div., James Hunter Machine Co., North Adams, Mass. F. P. MacKinney (center) has been appointed manager of the Charlotte, N. C., office of Sandoz Chemical Works, Inc. HARRY W. FEHR (right) has been elected president of Steel Heddle Mfg. Co., Philadelphia, Pa.

Arthur N. Green, and Russell F. Crawford, Jr., have been named to the sales development staff in the Chemicals Dept. Arthur G. Heinel named technical representative in Richmond, Va., and Adrian J. Stewart named representative in Atlanta, Ga. . . . **BABCOCK & WILCOX CO.**, Beaver Falls, Pa.—G. H. Weight appointed Southwest district manager for the Tubular Products Div. Ralph K. Behr named manager of the Boiler Div. district office, Boston, Mass. . . . **W. H. BAGSHAW CO.**, Nashua, N. H.—Has appointed James H. Bagshaw, president; Mark H. Bagshaw, vice president, sales and engineering; Thomas W. O'Day, vice president, production; Joseph J. Bagshaw, treasurer and general manager; Arthur P. Sommer to the sales staff. . . . **BRINTON MACHINE CO.**, Philadelphia, Pa.—Name changed from H. Brinton Co., Inc. Permanent exhibit of machinery has been opened on the first floor of the Brinton Building. . . . **CIBA CO., INC.**, New York, N. Y.—Henry X. de Redon named manager of the New England branch, succeeding Raymond W. Jacoby, retired. . . . **CLARK EQUIPMENT CO.**, Battle Creek, Mich.—L. A. DePolis appointed general sales manager of Industrial Truck Div. . . . **COLSON CORP.**, Elyria,

Courtaulds (Alabama) Inc., Mobile, Alabama
Engineers and Builders, The H. K. Ferguson Co., Inc.

How new Courtaulds plant produces uniform rayon staple

Efficient, ultra-modern equipment makes this plant a textile engineer's dream.

Capacity is over 50,000,000 lb. of viscose staple per year. Precise techniques and constant quality-control checks safeguard this world-famous name in rayon.

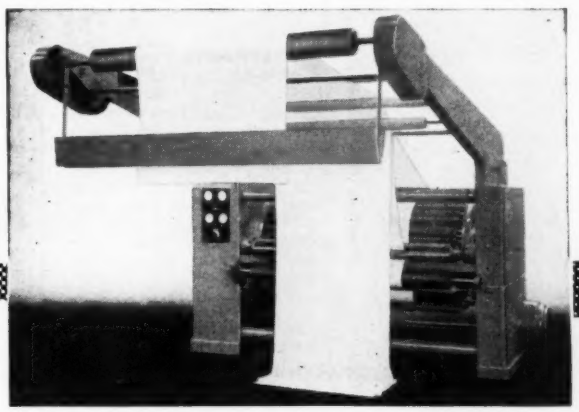
Although the water supply contains *only a fraction* of a grain of hardness, consulting engineers recommended softening. To insure highest viscose quality, three push-button automatic Permutit Softeners control *water quality*.

You can get this same protection for your plant. We'll gladly supply helpful data. The Permutit Company, Dept. TW-10, 330 West 42nd Street, New York 36, N. Y. or Permutit Company of Canada, Ltd., 6975 Jeanne Mance Street, Montreal.

PERMUTIT®

WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS

Know what you're doing when you nap with the NEW GESSNER NAPPER



Gessner's new Hi-Torc Napper gives you maximum napping effect on any fabric without usual waste or flocking out, a new development in the napping field.

Four unique features of this new Gessner Napper include precise napper-roll torque control, self-correcting speed controls, higher positive cloth inspeed, and infinitely variable cloth tension control. Application of high maximum napping energy gives you as much as four times the production.

Extreme accuracy of the controls and a simple, positive means of making settings, which are automatically maintained, assure greater efficiency. In addition, a wider range of napping effects is possible because this new drive controls not only the speed but also the power exerted on the worker rolls. Cloth tensions are controlled by the automatic slack take-up of the torque-activated, takeaway feed roll. Ask for complete details.

DAVID GESSNER COMPANY WORCESTER, MASSACHUSETTS

Canadian Representative: W. J. Westaway, Montreal, Quebec; Hamilton, Ont.

HOW TO EFFICIENTLY CHELATE IRON THROUGHOUT pH RANGE...

THE Versenes®

VERSENE REGULAR
pH 2.0 — 7.0
REASON FOR USE
most stable chelate, most economical.
COMMENTS
best chelating agent for iron in acid solutions. Also chelates other polyvalent metals throughout pH range.

VERSENE REGULAR (original EDTA) — An excellent Chelating (complexing) Agent for iron in *acid* pH range. Loses effectiveness for iron as pH increases above 7. Also chelates other polyvalent metals throughout pH range.

VERSENE Fe-3 SPECIFIC
pH 7.0 — 12.5
REASON FOR USE
very stable chelate, most economical.
COMMENTS
do not use with strong oxidants.

VERSENE Fe-3 SPECIFIC Efficiently chelates iron in pH range from 7 to 12.5. Quantity of Versene Fe-3 Specific must be increased to keep a given amount of iron in solution as pH increases.

VERSEN-OL®
pH 3.0 — 12.5
REASON FOR USE
first chelates iron, then, until exhausted, deactivates other polyvalent metals.
COMMENTS
do not use with strong oxidants.

VERSEN-OL® (N-hydroxyethylethylene diamine triacetic acid tri sodium salt.) Similar to Versene Fe-3 in effect. Differs by first inactivating any iron ions present before going on to Ca, Mg and other polyvalent metal ions. Reacts with all polyvalent metals on a mole-to-mole ratio. At high pH's, it loses some efficiency for iron, and more is required.

VERSENE Fe-3
pH 2.0 — 12.5
REASON FOR USE
chelates limited quantities of iron plus large amounts of other metal ions if present.
COMMENTS
ratio of iron in alkaline solution must not be excessive to the Versene Fe-3 used. Strong oxidants may reduce effectiveness of this component.

VERSENE Fe-3 (A physical blend of Versene Regular and Versene Fe-3 Specific.) Combines effect of both compounds but each works independently. The Versene Regular component acts only toward polyvalent metal ions other than iron but the Versene Fe-3 Specific component specifically chelates the iron in alkaline solutions.

VERSENE-T
pH 12.5 to high conc. of Caustic
REASON FOR USE
prevents precipitation of iron or dissolves iron rust in caustic solutions.
COMMENTS
do not use with strong oxidants.

VERSENE-T Most efficient iron Chelating Agent known for use in caustic solutions. Will not function *unless* free caustic is present. Also chelates other metals including Ca, Mg, Cu, Ni, Co, etc.

NOTE: Iron Chelating Agents containing hydroxyl groups may be oxidized by peroxide, chlorine, hypochlorite, etc. which destroys the ethanolic groups. Hence, only Versene Regular is recommended when complete stability is required in presence of strong oxidants.

Ask for Technical Bulletin #2. Competent Counsel available for those who want maximum chelating efficiency at minimum cost.

"Chemistry's most precise chemicals"

VERSENES INCORPORATED
(FORMERLY BERSWORTH CHEMICAL CO.)
FRAMINGHAM, MASSACHUSETTS

KEY TO CHELATION

SEE US IN CHICAGO AT BOOTH 227

224 For more information, write direct or use Reader Service post card.

NEWS ABOUT SUPPLIERS *(Continued)*

Ohio—Edward C. Hamm named vice president and director of sales. . . . **COLUMBIA-SOUTHERN CHEMICAL CORP.,** Pittsburgh, Pa.—Construction contracts have been awarded for the erection of a control and research laboratory and a development building at Natrium, W. Va. . . . **W. D. DODENHOFF CO. & TEXTILE EQUIPMENT CORP.,** Greenville, S. C.—Offices and plant have been transferred to 745 Lowndes Hill Rd., Greenville. . . . **DRAPER CORP.,** Hopedale, Mass.—New Products Div. has been formed, headed by Emerson B. Tifft,

IRA HURD (left) has been named sales manager of the Textile Div. of E. F. Drew & Co., Inc., New York, N. Y. F. M. WALLACE (center) has been promoted to assistant manager of the Textile Div. of Keever Starch Co., Greenville, S. C. L. VINCENT NEESE (right) has been named to the sales engineering staff of the Marshall & Williams Sales Corp., Greenville, S. C.

assisted by William B. Gannett. . . . **W. F. FANCOURT,** Philadelphia, Pa.—Jeffrey W. Young named assistant sales manager. . . . **FOSTER MACHINE CO.,** Westfield, Mass.—Has purchased adjoining land and building of Warren Thread Works. . . . **HUNTER MACHINE CO.,** North Adams, Mass.—Has formed Hunter Controls, Inc., as a manufacturing division. James T. Hunter named president. . . . **KARL LIEBERKNECHT, INC.,** Reading, Pa.—Has purchased Premier Textile Co., Inc., Jersey City, N. J. . . . **MINNEAPOLIS-HONEYWELL REGULATOR CO.,** Philadelphia, Pa.—John H. Hagen named director of industrial relations for Brown Instruments Div. In Micro Switch Div., Emmett N. Hughes named Western sales manager; John K. Lincoln named Eastern sales manager; Anderson Wacaser named to head new market-research department. . . . **NATIONAL VULCANIZED FIBRE CO.,** Wilmington, Del.—Has merged the Fibre Specialty and Phenolite Divs., under name of Kennett Plant, Kennett Sq., Pa. . . . **OWENS-CORNING FIBERGLAS CORP.,** New York, N. Y.—William M. Keller named general sales manager and George S. McElroy named general factories manager of the Fiberglas Textile Products Div. . . . **WILLIAM POWELL CO.,** Cincinnati, Ohio—William Morrison named sales representative in the New York area. . . . **ROHM & HAAS CO.,** Philadelphia, Pa.—Opened a new service office in Atlanta, Ga. . . . **SONOCO PRODUCTS CO. OF CANADA LTD.,** Brantford, Ont.—

J. W. BURCH (left) and J. A. SNYDER (center) have joined the Textile Finishes Dept. of Procter & Gamble, Cincinnati, Ohio. ALBERT H. GOWER (right) has been appointed general sales manager of Warwick Chemical Co., Div. of Sun Chemical Corp., Long Island City, N. Y.

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Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 37 W. 43rd St., MU 2-1437; ATLANTA—W. E. Patway, 4403 Jefferson St., Chamblee, Ga., Phone 7-2430; FORT WORTH—V. M. Hooton, 4220 Normandy Road, Tel. Lockwood 6564; LOS ANGELES—Fred J. Petersen, 4645 East Olympic Blvd., ANgelus 0292; Export Manager—R. A. Auerbach, Easton, Pa. Cable Address: "Natly".

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Supreme
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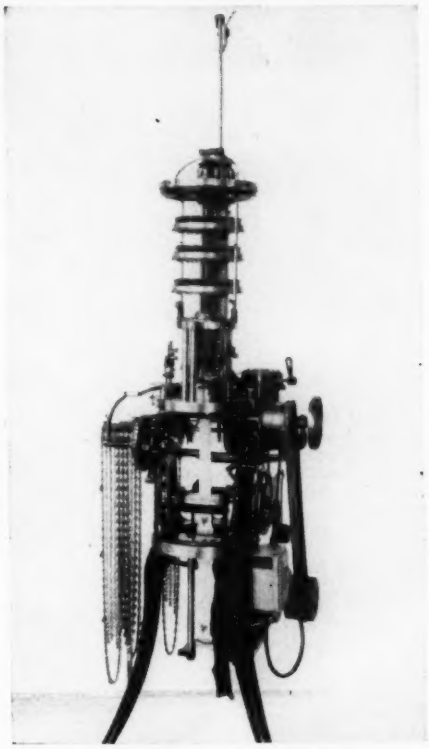

Standard Equipment—FIDELITY MACHINE CO. Model S-49G, Multi-Design Ribber

Team work that pays off in greater profits, by increasing production (on any machine) through the elimination of unnecessary press-offs, knitting breakdowns, broken needles and wasted yarns. Always *specify Wesco Stop Motions* for trouble free production.

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Another of a Series of Knitting Machine Builders. Others to follow

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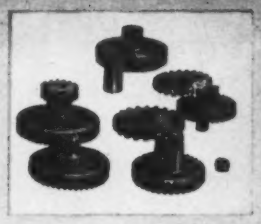

CARDING

SPECIAL COILER GEARS, designed to reduce Can Table speed and lay Sliver coils closer. They add pounds per can, without reducing sliver quality. They reduce creeling time on lap machine; lengthen time between doffs. Low cost, easy to install on H & B, Whitin, Saco-Lowell, Saco-Pettee.

ROVING

JACK SHAFT BEARINGS for all Roving Frames—they pay out in power savings. Stop drag and maintenance. Add smoother, quieter operation. Life-time sealed, prelubricated, self-aligning.

SPINNING

BALL BEARING CAM UNIT aids in perfect ring rail movement, stops play between stud and housing, provides more and better bobbin build. No lubrication, no wear compensating, no replacement.

WEAVING

LOOM HARNESS SHEAVES with prelubricated and sealed ball bearings are inexpensive, integral units, with 1" bore to fit standard shafts. Their smooth, trouble free performance, with negligible maintenance, provide definite competitive advantages.

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PRECISION

ENGINEERED PG TESTED

NEWS ABOUT SUPPLIERS *(Continued)*

Nelson F. Batchelder appointed sales manager. . . . **A. E. STALEY MFG. CO.**, Decatur, Ill.—A. R. Staley elected a vice president. . . . **STAUFFER CHEMICAL CO.**, New York, N. Y.—Robert U. Haslanger appointed to the administrative staff. . . . **STEEL HEDDLE MFG. CO.**, Philadelphia, Pa.—Has acquired from the Formica Co. all tooling and the right to produce the Gyro-Tex design of winder spinner and 5-B twister bobbins. . . . **TEXAS CO.**, New York, N. Y.—Dr. Wayne E. Kuhn named general manager of the newly created research and technical department. . . . **TORRINGTON CO.**, Torrington, Conn.—William St. Onge, Jr., named advertising manager. . . . **UNION CARBIDE & CARBON CORP., CARBIDE & CARBON CHEMICALS CO.**, New York, N. Y.—Robert D. Stewart and Sebern G. Sellers have joined the Fine Chemicals Sales Group. . . . **VEEDER-ROOT, INC., Hartford, Conn.**—Feith D. Graham, Andrew J. Bebmann, and Leon J. Dunn elected vice presidents. . . . **WYANDOTTE CHEMICALS CORP., MICHIGAN ALKALI DIV.**, Wyandotte, Mich.—Charles F. Sanborn promoted to senior sales representative with headquarters in New York.

NEWS ABOUT *Mills*

COTTON MILLS

American Thread Co. will transfer the machinery from its plant at Bristol, Tenn., to its new plant at Sevier, N. C., by March, 1955. An industrial sales office, a branch office, and a warehouse also will be established in its building at Bristol.

Elljean Mill, Pickens, S. C., has begun operations in its new mill. The new plant is one-story, 350x110 ft., with five 50x100-ft. warehouses. Equipment includes 114 Saco-Lowell cards, 180 SG-1 spinning frames, Abbott winders and quillers, a Cocker high-speed warper, two West Point Air-Dri slashers, and 1,200 Hunt HR-1 looms.

Ely & Walker, St. Louis, Mo., has awarded the contract at $750,000 to McKay-Helgerson Co., Greenville, S. C., for construction of a one-story, 200,000-sq. ft. cotton-storage warehouse. The building will have concrete walls and metal deck roofing.

Gold-Tex Fabrics Corp., Rock Hill, S. C., plans to have its reconditioning program completed by the end of November. The cost is estimated at $200,000.

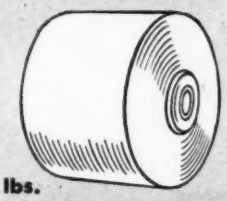
Locke Cotton Mills Co., Concord, N. C., has been granted an SBA loan of $150,000 for debt payment and working capital.

Mayfair Mills, Arcadia, S. C., has completed a $6,000,000 expansion and modernization program. A new weave room containing 75,000 sq. ft. of floor space has been added to the mill. New equipment has been installed in the opening room, card room, spinning room, and slashing department. An addition was constructed to the boiler house, and a new automatic oil-burner boiler was installed.

Mooresville Industrial Council, Inc., Mooresville, N. C., will proceed with the construction of a one-story building that will cost $90,000. Barger Construction Co., Mooresville, is the contractor. The structure has been leased to a manufacturer of cotton yarns. Biberstein, Bowles & Meacham, Charlotte, N. C., is the architect.

BARBER COLMAN

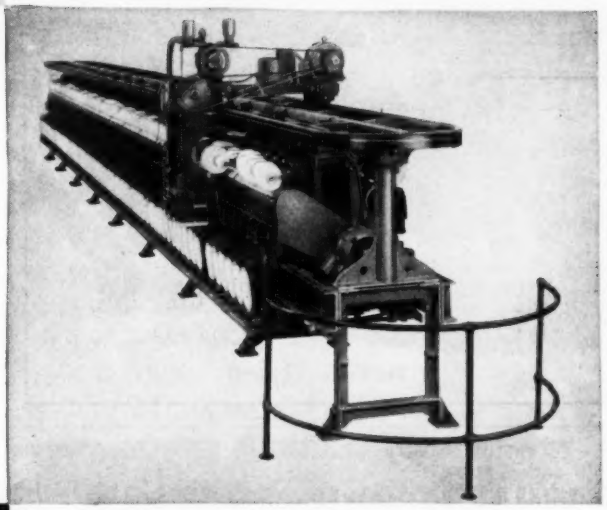
LARGE-PACKAGE SPOOLING AND WARPING

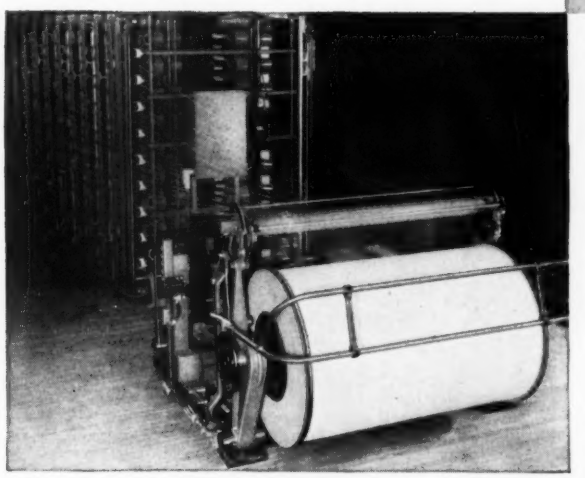


TYPE "D" PACKAGE
weight up to 6½ lbs.

New AUTOMATIC SPOOLER

This new Type "D" machine, specially designed to extend the advantages of large-bobbin spinning, will produce packages weighing up to 6½ pounds. It is an improved and modernized version of the familiar Type "C" Spooler.





New SUPER-SPEED WARPER AND CREEL

This Warper is capable of running larger beams, up to 40 inches head diameter. The Creel (not shown here) is designed to handle 6½ pound "D" type cheeses. Both units are modernized versions of successful Barber-Colman equipment — now redesigned to provide greater production at lower cost.

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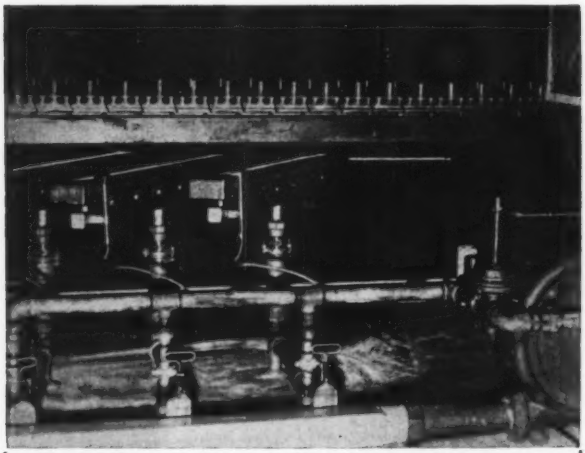

RED-RAY BURNERS

Installed under opened tenter frame for increased drying capacity

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RED-RAY MANUFACTURING CO., INC.

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All standard widths and weights

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NOONE INDUSTRIAL FABRIC DIV. KENWOOD MILLS

Peterborough, New Hampshire

The oldest manufacturer of woven industrial fabrics in America

NEWS ABOUT MILLS *(Continued)*

Russell Mfg. Co., Alexander City, Ala., is not associated in any way with the construction of a mill in Lucedale, Miss., as was incorrectly stated in this department recently. Instead, it is the Basila Mfg. Co. for which this plant is being erected by the George County Board of Supervisors.

Spartan Mills, Spartanburg, S. C., has awarded the contract for a $111,000 warehouse and unloading shed to Fiske-Carter Construction Co.

Woodside Mills, Simpsonville, S. C., plant has installed six new Abbott winders and three new Reiner warpers.

WOOLEN AND WORSTED MILLS

Burlington Mills Corp., New York, N. Y., has purchased controlling interest in Goodall-Sanford, Inc., Sanford, Me.

Coats & Clark, Inc., New York, N. Y., has added a Wool Spinning Dept. at its Albany, Ga., mill. The new department occupies 20,000 sq. ft. of floor space. Both American and Bradford systems will be used to spin hand-knitting worsteds.

Runnymeade Corp., a subsidiary of Kent Mfg. Co., Clifton Heights, Pa., will take over the operations that were started at Pickens, S. C., by Pickens Mfg. Co. Kent's combing and woolen mill will remain at Clifton Heights, but its French-system worsted-yarn operations will be transferred to Pickens. Machinery is now being installed and operations will begin soon.

Alexander Smith, Inc., Yonkers, N. Y., has purchased a plant at Liberty, S. C., from Julius Kayser & Co. The plant will be equipped for weaving and finishing velvet carpets. Operations will begin this fall, with full production reached in the spring.

Wellman Wool Combing Co., Johnsonville, S. C., recently completed the construction of its 150,000-sq.-ft. plant.

Wool Processing Co., Inc., Woonsocket, R. I., has changed its company name to Cashmere Wool Processing Co.

SYNTHETICS MILLS

Sidney Blumenthal & Co., Inc., Rich Square, N. C., has completed the construction of its new 30,000-sq.-ft. plant. New machinery is being moved in.

Belding Corticelli, New York, N. Y., is constructing a brick warehouse at South Hackensack, N. J. The new warehouse will contain 45,000 sq. ft. of inventory area.

KNITTING MILLS

Berkshire Knitting Mills, Reading, Pa., has purchased a 32-acre farm tract along the Tulpehocken Creek, at Blue Marsh, several miles northwest of Reading, Pa., to be converted into a recreational area for employees.

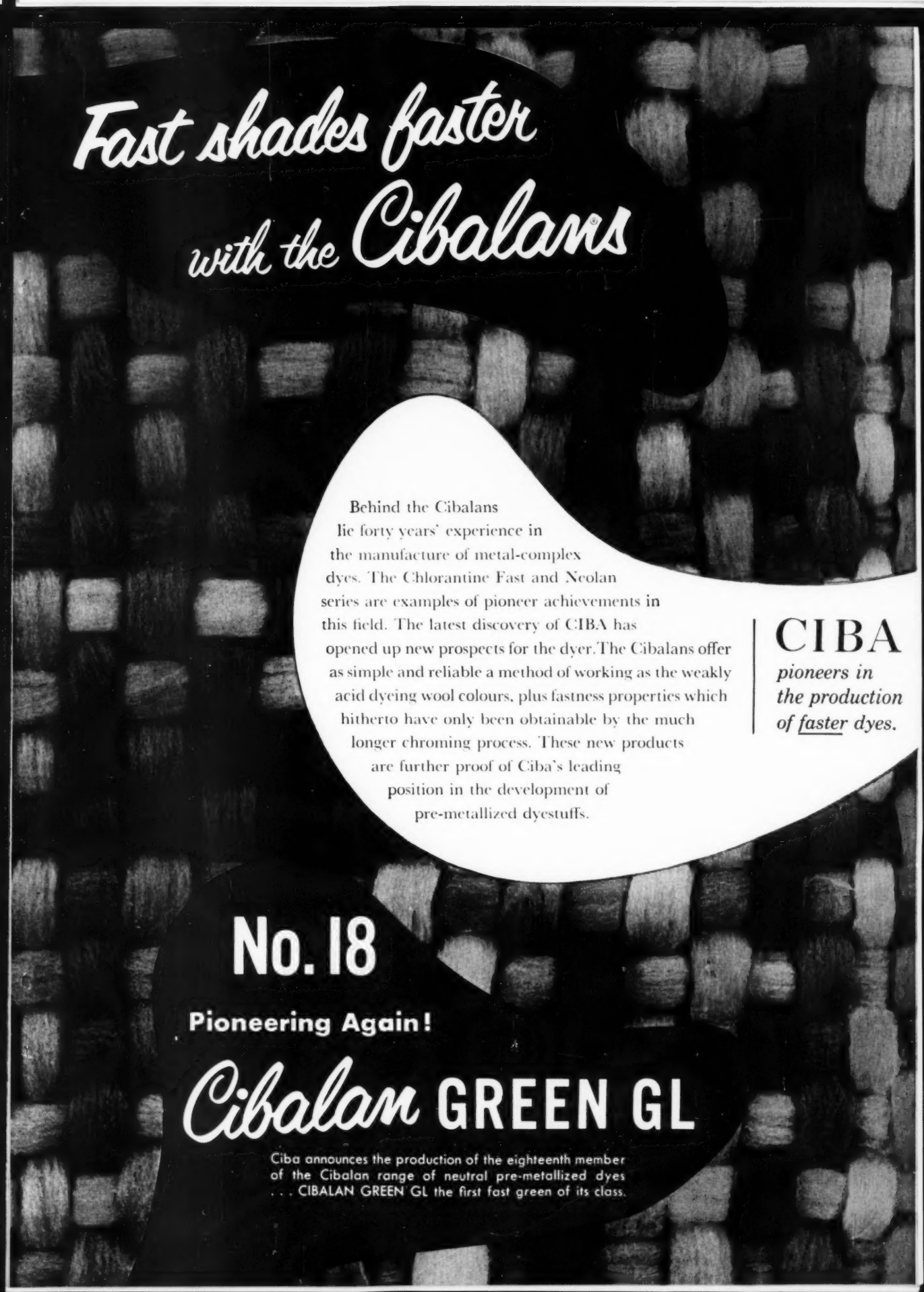
Cline Hosiery Co., Spruce Pine, N. C., has completed a 6,500-sq.-ft. addition to its mill.

Dixie Knitwear Co., Charlotte, N. C., has been established to manufacture children's polo shirts. L. S. Frumer and Arthur Chariton, formerly of Philadelphia, are partners in this new company.

General Knitting Mills, Monroe, N. C., has purchased the building and land that it has occupied under lease. The building contains 24,500 sq. ft.

Hanson Hosiery Mills, Chambersburg, Pa., will add 6,000 sq. ft. to its 22,000-sq.-ft. plant. Additional machinery for 75-gauge, 10-den. nylon full-fashioned hosiery will be installed.

Hollycraft Hosiery Mills,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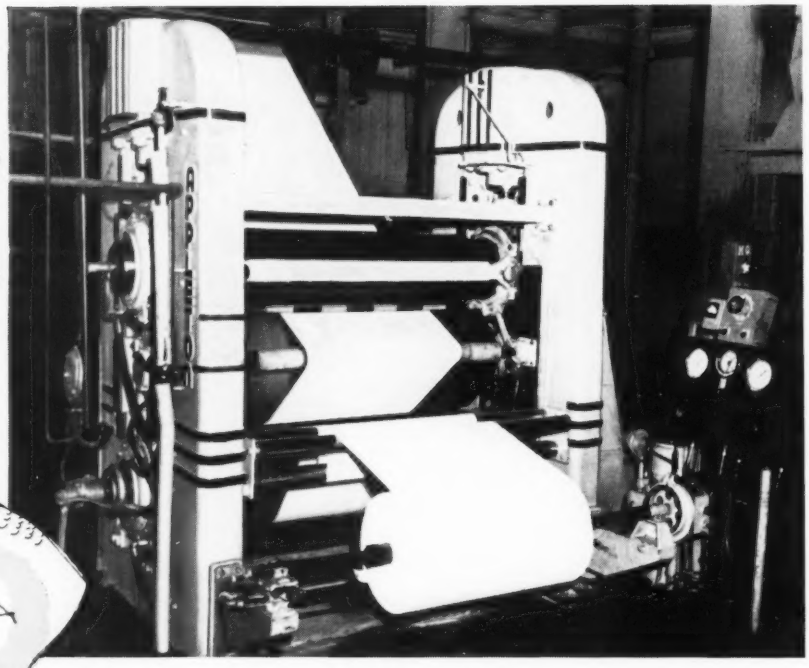
Behind the Cibalans lie forty years' experience in the manufacture of metal-complex dyes. The Chlorantine Fast and Neolan series are examples of pioneer achievements in this field. The latest discovery of CIBA has opened up new prospects for the dyer. The Cibalans offer as simple and reliable a method of working as the weakly acid dyeing wool colours, plus fastness properties which hitherto have only been obtainable by the much longer chroming process. These new products are further proof of Ciba's leading position in the development of pre-metallized dyestuffs.
CIBA
pioneers in the production of faster dyes.
No. 18
Pioneering Again!
Cibalan GREEN GL
Ciba announces the production of the eighteenth member of the Cibalan range of neutral pre-metallized dyes . . . CIBALAN GREEN GL the first fast green of its class.

Choose your Champion



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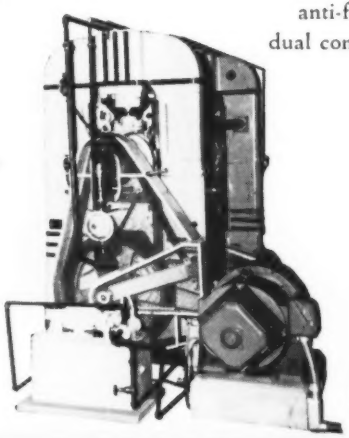
...in Any weight division

The Appleton 3 Roll Hydraulic Friction Calender —available in 40 to 120 Ton models—takes difficult jobs in easy stride, performs dependably day after day, combines speed with consistent quality. Illustrated is the 80 Ton model. Its specialty— Everglaze Glazed finishes.

Long life features include all rolls mounted in anti-friction bearings with force feed oil lubrication . . . dual control pressure system . . . cooling cylinder . . . 40 h.p. Reliance V.S. drive.



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APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

Hollywood, Calif., is planning to transfer its seamless-hosiery production to North Carolina. At the start, 37 machines will be set up. Dyeing, finishing, and distributing with be handled by Belvedere Hosiery Co., Charlotte, N. C.

Meridian Industries, Inc., Meridian, Miss., formerly Sanson Hosiery Mills, recently reopened with about 170 workers. Officers of Meridian Industries are: Jack L. Harris, president; Ben Pollman, vice president; John E. Egger, secretary-treasurer. Plans for expansion are under way.

Nolde & Horst Co., Reading, Pa., is reported to have rented its Womelsdorf, Pa., mill with about 35 full-fashioned machines to an unidentified New York firm.

Olympic Knitwear, Inc., has moved to 189 N. Franklin St., Hempstead, N. Y.

Winchester Knitting Mills, Winchester, Va., has been incorporated for $25,000 by W. H. West, Jr., S. E. Brown, Jr., and L. L. Fuller.

DYEING AND FINISHING PLANTS

Geltman Sponging Corp., Cleveland, Ohio, has sold its Woonsocket, R. I., plant to Mack Kahn.

Greenwich Printing & Dyeing Co., East Greenwich, R. I., will erect a 5,000-sq.-ft. addition. New equipment will include a 10-color, 48-in. printing machine, an eight-box open soap washer, a plisse unit, a compressive-shrinkage machine, and an ager.

Guaranty Silk Dyeing & Finishing Co., St. Catherines, Ont., has been purchased by Canadian Pittsburgh Industries Ltd. Operations will continue under the name of Resin Tex Ltd. W. H. MacCartney is president of the new firm.

Hull Dye Works, New Haven, Conn., has been incorporated with 5,000 shares of no-par common stock to dye and finish textiles.

Joanna Western Mills Co., Chicago, Ill., will construct a new plant for the production of plastic-coated fabric. The cost will be about $1,000,000.

Milwaukee Dye & Bleach Co., Milwaukee, Wis., has installed stainless-steel units to replace its older equipment.

Queen Print Works, Providence, R. I., has spent $250,000 on new equipment during the last year. Extra-wide printing machines have been installed to handle drapery fabrics.

Southern Bleachery & Print Works, Inc., Taylors, S. C., will construct a new addition and make alterations and improvements in its present mill unit. Robert & Co., Atlanta, Ga., is the architect and engineer.

MISCELLANEOUS MILLS

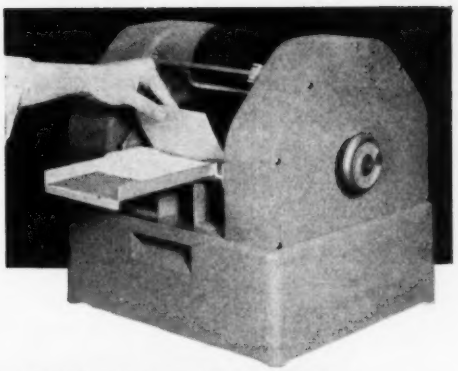
Amtex Co., a subsidiary of American Textile Co., Pawtucket, R. I., has opened a plant in Drummondville, Que., for the manufacture of lace.

Ansonia Mills, Inc., New York, N. Y., and Actonvale Silk Mills Co. Ltd., Montreal, Que., have combined their production of elastic and rigid fabrics for the swimwear and foundation industries in Canada.

Graham Tape & Webbing Co., Central Falls, R. I., has filed notice of increase in capital stock to 1,000 shares, no par value, for general operations.

Southern Elastic Corp, Hickory, N. C., is a new manufacturing concern scheduled to begin operations soon on the manufacture of rubber-covered yarn. The company has leased the former Ford Hosiery Mill building. New machinery will be installed.

United Laces & Nets, Inc., Central Falls, R. I., has been reorganized and will be operated as a division of American Fabrics Corp., Bridgeport, Conn.



THE NEPOTOMETER

A NEW INSTRUMENT for predicting the potential of cotton fibers. Developed by North Carolina State College under contract with the U. S. Department of Agriculture.

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NEWS ABOUT Men

Martin Anderson has been named overseer of weaving at Airedale Worsted Mills, Woonsocket, R. I.

Robert Austin has been named overseer of dyeing at Gloversville Knitting Co., Gloversville, N. Y.

C. D. Bedell has resigned as superintendent of the Knitted Fabrics Div. of Gloversville Knitting Co., Gloversville, N. Y.

Joseph J. Bird has been elected executive vice president and general manager of Standard Hosiery Mills, Inc., Burlington, N. C., succeeding Clyde W. Gordon.

Morris Bornstein has been named president of Consolidated Textile Mills Ltd., Montreal, Que. He succeeds the late Garner H. Bornstein. Richard Bornstein has been named vice-president.

James E. Bothwell has retired as overseer of carding at Gilbert Knitting Co., Inc., Little Falls, N. Y.

Thomas Bruce has been promoted to superintendent of the Dublin Mills of J. P. Stevens & Co., Inc., Dublin, Ga. He succeeds Don Johnson, who has been transferred to the Franklin, N. H., mills of the company.

Harry H. Burton is retiring as a vice president of Textron, Inc., Providence, R. I. He will continue as a director and a member of the executive committee.

Fred P. Couch has been named superintendent of knitting, bleaching, and dyeing at P. H. Hanes Knitting Co., Winston-Salem, N. C. David M. Tally, Jr., has been named assistant superintendent.

W. F. Crowder has been promoted to assistant general manager of Clover Spinning Mills, Clover, S. C. Jim Parrish has been appointed plant superintendent.

Kenneth H. Doyle has been named superintendent of Hayward-Schuster Woolen Mills, Inc., East Douglas, Mass. He succeeds W. H. Mellor, resigned.

ARTHUR EICHELBERGER has been promoted to vice president of A-Q Mills, Timmonsville, S. C.

Jewett T. Flagg has been elected chairman of the board of Flagg-Utica Corp., Utica, N. Y., succeeding Jerome A. Newman. Edward P. Brown has been named to head the executive committee, succeeding Howard A. Newman. Mr. Flagg has also been elected to the board of American Woolen Co., Lawrence, Mass.

J. G. Freeman has been named controller of Chronicle Mills, Imperial Yarn Mills, Inc., National Yarn Mills, Inc., and Stowe Spinning Co., all located in Belmont, N. C.

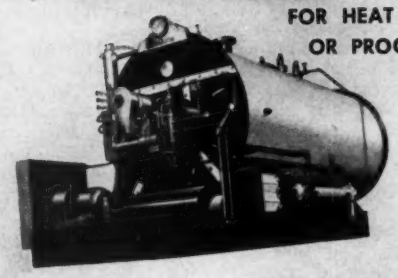
Houston Fuller has been named superintendent of Roanoke Mills Co., Roanoke Rapids, N. C.

Harold Harrelson has been named superintendent of the Haynsworth Mill, Anderson, S. C. He succeeds W. H. Monckton.

A. C. Hedgepeth has been appointed head of quality control for Sidney Blumenthal & Co., Inc., New York, N. Y. He will make his headquarters

STEAM

FOR HEAT
OR PROCESS



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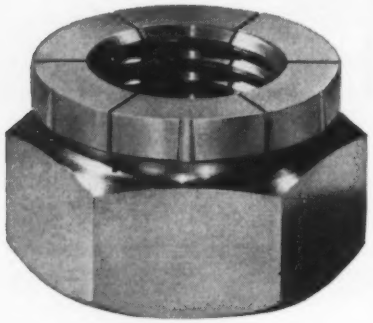

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173 Hudson Street New York 13, N. Y.
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NEWS ABOUT MEN *(continued)*

at the Caramount Div., Rocky Mount, N. C.

Frank Heslewood has been named overseer of carding on the third shift at Botany Mills, Inc., Passaic, N. J. **Arthur Clough** has been named to head the Materials Control Dept.

Ray Holshouser has been promoted to superintendent of the No. 9 plant of Cannon Mills Co., Kannapolis, N. C. He succeeds **J. M. Talbert,** resigned.

W. Gaines Huguley has been named president of F. W. Poe Mfg. Co., Greenville, S. C. He succeeds **C. A. Gibson,** who has resigned to serve as director of manufacturing at Ely & Walker Co., Warrenton, Mo.

Roy E. Johnson has been promoted to superintendent of the Ragan Spinning Co., Ragan, N. C.

Gordon Klager has been named president of Dominion Woolens & Worsteds, Toronto, Ont. He will continue as managing director, with headquarters in Hespler.

J. Harold Lineberger has been elected president of Piedmont Processing Co., Belmont, N. C. **James H. Martin, Jr.,** has been elected to the newly created position of executive vice president and to the board of directors.

Austin B. Mason has been named resident manager of Pacific Mills, Lawrence, Mass. **John J. Warnke** has been appointed to the newly created position of superintendent of woolen manufacturing and finishing.

John Milnes has been promoted to overseer of carding at M. T. Stevens & Sons Co., North Andover, Mass., succeeding **Owen Meserve. Phil Midgley** has been promoted to overseer of spinning, succeeding **John Finn.**

Robert R. Mitchell has been named controller of Berkshire Knitting Mills, Reading, Pa., suceeding **George Compton,** resigned.

A. F. Mullins, Jr., has retired as vice president and secretary of Avondale Mills, Sylacauga, Ala.

George Norman, Alfred C. Turino, Ervin A. Schutz, Douglas M. Orr, Abe W. Womack, and **John F. Cook** have been elected to the board of Goodall-Sanford, Inc., Sanford, Me.

Donald J. Owler has been elected president of Almardon Mills, Inc., Lonsdale, R. I., succeeding his father, **Albert J. Owler,** who has been elected board chairman and treasurer. **Chester H. Boyce** has been elected vice president in charge of manufacturing.

Lewis R. Parker has been elected president of Albany Felt Co., Albany, N. Y. He succeeds **Frederick McDonald,** who has been elected vice chairman of the board.

John M. Reeves has been elected chairman of the board of Reeves Bros., Inc., New York, N. Y. **John E. Reeves**

ALEXANDER J. MAINO has been named vice president in charge of manufacturing at Wauregan Mills, Wauregan, Conn.

JOHN J. SMITH has been named general manager of the Non-Woven Fabrics Div., Chicopee Mfg. Corp., New Brunswick, N. J.

has been elected president and treasurer.

Roland Reilly has been appointed superintendent of the Springfield, Mass., plant of William Carter Co.

Duncan Rogers has been elected to the board of Pepperell Mfg. Co., Boston, Mass. He succeeds the late **William Amory.**

Adin H. Rucker has been elected to the newly created office of executive vice president of Stonecutter Mills Corp., Spindale, N. C. **D. M. Bridges** has been appointed assistant secretary and assistant treasurer.

James R. Scott has been elected executive vice president and general manager of the Charles H. Bacon Co., Lenoir City, Tenn.

Egbert Sewall has been named night superintendent of W. S. Libbey Co., Lewiston, Me.

E. T. Strickland has resigned as night superintendent at Palmetto Worsted Mills, Laurens, S. C.

Henry W. Suber has been named to head the operations of the three plants of Republic Cotton Mills, Great Falls, S. C. **Carl A. Johnson** will continue as general superintendent of Plants 1, 2, and 3.

R. C. Swan has been named superintendent of yarns at Malden Spinning & Dyeing Co., Inc., Malden, Mass.

OBITUARY

John H. Bateman, retired manager of Southern Worsted Mills, Inc., Greenville, S. C.

Max P. Beal, 63, former superintendent of Rhodes-Rhyne Mfg. Co., Lincolnton, N. C.

Charles C. Bobo, 70, retired overseer of dressing for Dan River Mills, Inc., Danville, Va.

Garner H. Bornstein, 65, president of Consolidated Textiles Ltd., Montreal, Que.

Frank H. Deknatel, 74, a director of Bigelow-Sanford Carpet Co., New York, N. Y.

James C. Greer, 59, vice president and general manager of Charles H. Bacon Co., Inc., Lenoir City, Tenn.

James W. Hanson, president and chairman of the board of Southland Knitting Mills, Macon, Ga.

Thomas Lupinacci, founder and president of Northeast Spinning Mills, Philadelphia, Pa.

Herman Mantell, 82, president of Van Kirk Hosiery Mills, Inc., Philadelphia, Pa.

David S. Rosenthal, 54, vice president and a director of United Merchants & Manufacturers, Inc., New York, N. Y.

Thomas M. Roth, Sr., 51, assistant superintendent and a director of Chatham Mfg. Co., Elkin, N. C.

Benjamin Safran, 87, retired president of Metric Knitwear Co., Inc., New York, N. Y.

David S. Seaman, 74, founder of Priscilla Worsted Mills, Thornton, R. I.

Robert J. Stack, 49, president of National Automotive Fibres Corp., Detroit, Mich.

Heinrich Steiner, former president of Joh. Jacob Rieter & Co. Ltd., Winterthur, Switzerland, and American Rieter Co., Arlington, N. J.

Cornelius Stellingwerf, 54, general superintendent of Samuel Hird & Sons, Inc., Garfield, N. J.

Edward W. Swift, 89, chairman of the board of Muscogee Mfg. Co., Columbus, Ga.

Benjamin I. Ward, 84, president of Bellman Brook Bleachery Co., Fairview, N. J.

Andrew J. Weisbecker, 45, owner of Hartsville Hosiery Co., Hartsville, Pa.

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We can place—MANAGER cot. piece goods dye., bleach. and finish. plant: tricot mill mgrs., supts., overseers and fixers: mgrs., supts., overseers and loom fixers for jacquard loom rayon mills: worsted yarn supts.: woolen mill supts. and asst. supts.: knit. fabric designer.

OVERSEERS for wool sorting for top making: worsted draw.: pile fabric weav.: worsted twist.: cutting (sweaters): slashing (denims): worsted finish.: cot.-rayon piece goods dye.: cot. weav. Draper looms. Garnett foremen and fixers. Salesman to sell wool oils and finishing materials in Mass. and R. I.

SECOND HANDS for woolen card.: rubber covering dept., dyeing raw stock, yarns and pieces; cot.-rayon finishing.

CHEMISTS, chem. engineers and laboratory men for mills, also for demonstrating and selling. Salesmen to sell mills in the Carolinas: hosiery, underwear and sweater mach. fixers: jacquard loom fixer.

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FOR SALE

(Additional For Sale Advertisements on pages 237-242)

GOOD LOOMS ARE AVAILABLE

Draper

200—XD, 1949, 44" cloth, dobby
300—X2, 1945, 40" cloth, spring top
80 —XD, 1942, 46" Dbl. fork, cam
130—XD, 1946, 68" cloth, dobby
72 —XD, 1950, 64" cloth, dobby
36 —E, 40" cloth, cam
50 —E, 50" cloth, dobby
31 —K, 42" cloth, dobby
1 —XD, 46" cloth, dobby
32 —K, 44" cloth, Jacquards 600 hook
12 —O, 1935, 100" cloth, dobby
25 —D, 64" cloth, cam
67 —L, 90" cloth, cam & dobby
11 —P, 44" cam

C&K & Sundry

60 —S5, 1943—56" b/s S6 clutch 2 x 1
28 —W3, 1936—82" b/s 4 x 1
30 —C6, 40" cloth, dobby
44 —C4, 81" cloth, dobby
24 —S-5, 1951, 72" b/s
8 —C&K & Tonnar Plush Looms, 64"

Loom Parts

Stafford thread cutters, box fronts, lease rods, let-offs, loom beams, weavers' knotters, filling boxes, dobbies, whip rolls, midget feelers, drawing-in frames.

Special

600—Excellent Roving Cans, 12"

Many other lots available—48 spindles of Schweiter Winders, 290 Winders, 28 H&B 37" cards, 2 H&B Twisters, 5-½" gauge, 2 B/C Warpers, 1 B/C Cheese Creel, 3 Universal Creels, 400 end, 1 Cocker, 4 Johnson 9 can slashers, steam generators.

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12,000 wood Spools, 6" Traverse, 3¾" Head
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WANTED—MAN thoroughly experienced in the creation and manufacture of novelty yarns—highest salary to be paid to one who qualifies—mill of long standing and finest reputation—within forty miles of Phila. Reply for appointment to P-4056, Textile World.

CHEMICAL ENGINEER with experience in textile finishing or adhesives wanted as plant superintendent. Located Massachusetts. Salary commensurate with background and ability. Replies strictly confidential. Write P-4102, Tex-Textile World.

SOUTH AMERICAN mill requires a first class tricot mechanic and designer to act as instructor to our present tricot man for six months to one year. Give full details and salary desired in first letter with resume. Address reply P-4147, Textile World.

TEXTILE PLANT in South America needs a preparations man, expert in handling filament yarns, mainly nylon and acetate; capable of training personnel in warping both horizontal and sectional systems, slashing, quilling, warp entering both one and two beam work and leno entering who is also familiar with tying-in problems; cloth construction ability desirable. Send resume with full background details and desired salary to P-4148, Textile World.

POSITIONS WANTED

RASCHEL MECHANIC Available, thoroughly experienced in all phases of raschel operation, warping, and quality control, can analyze and design fabrics. PW-3745, Textile World.

THROWING MILL Supt. Well versed all phases of operation and management of throwing plant. Twenty two years experience. Quality throwing of Rayon, Nylon, Dacron for hosiery, Tricot, Lace and speciality work. Thorough knowledge quality control, cost and incentives, labor relations and references excellent. Willing to go anywhere. PW-3981, Textile World.

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NYLON RAYON silk throwster, highly experienced, capable, references, married. PW-3951, Textile World.

MANAGER OR superintendent of weaving mill, 20 years experience on all types fancy fabrics such as tie goods, dress goods, fiberglass, nylons, rayons and suitings. Experienced on all types of machinery. Can furnish excellent references. Salary optional. PW-3822, Textile World.

(Continued on page 238)

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33-ATWOOD Single and Double Deck Motorized TWISTERS

84-UNIVERSAL #50 NYLON CONERS

Roller bail pineapples, stainless steel emulsion troughs and rolls, L—Drive. Anti-wear tensions. Gear gain. 6 spindle machines. Some motorized—1 motor per 12 spindles—others 1 motor per 24 spindles.

72—Spindles UNIVERSAL 250 SIZING MACHINES

Complete with instruments and viscosometer

5-ATWOOD 1¾ lb. 10-B's

100 spindles per machine. 1946 model. 4½" Eadie Rings. 220 V. 60 cycle 3 phase motorization. Machines in excellent condition.

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4-1953 ATWOOD 3-1947 ATWOOD Mod. 200 Spindleless *High Speed REDRAWS*

84 spindles per machine. Will take bobbin up to 7" traverse. Gate tensions. Machines almost new.

196—Spindles FOSTER 75 A NYLON CONERS

Complete with roller bail pineapples. Gear gain.

7—ATWOOD 1 lb. Pkge. *(4 Monarch - 3 Utility)* **D.D. TWISTERS**

5½" spindle spacing. 2 motors per machine.

6-ATWOOD Monarch Utility D.D. 2 Motor TWISTERS

½ lb. pkge. Bobbins available with machines.

LATE-TYPE EXTRACTORS

1—1947 Tollhurst 48" S.S. basket, motorization.
1—1948 Fletcher 30" S.S., underslung motorization.

1-1951 U.S. Textile Spindleless High Speed 60 Spindle Redraw

Gate tensions. Will take up to 7" traverse spool.

1-ATWOOD Model 110 Headless Pkge. D.D. Uptwister

152 spindles. Bobbins available with machine.

2-TOLEDO Late-Type 75 lb. Print Weight SCALES

30—Spindles 1945 WHITIN SCHWEITER Automatic Quilling

1-Sipp EASTWOOD 101" Silk System WARPER

300—DRAPER 44" Model XD LOOMS

132 C and K 56" S-6 LOOMS

15,000 Spindles TWISTING For Hellenca Yarns

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24" diameter—32" Face chain drive.

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1—3 Roll 50" Pneumatic Padder, 15 ton pressure complete with Panel 3 Rubber covered Rolls 18" Diameter.
1—3 Roll 60" Pneumatic Padder, 15 ton pressure, center roll S.S. Top & Bottom Rolls, Rubber covered, complete with Panel.
2—and 3 Roll Quetches 50" and 60" wide.
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2—Cook Detwisters practically new also Nash Pumps #2—3L #4 and 5L.
2—Sets of Mt. Hope Guiders and 1 set of Foxwell Air Guiders.
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1 P&S STAPLE CARD 60" x 32" Cylinder.
4 D&F 3 Cylinder Iron WOOL CARDS 60".
1 Gessner 3 Bowl CRABBE, 72", with 2 Rubber Squeeze Rolls in each bowl.
1 P&W SEMI-DECATUR, 72" x 60".
1 Gessner VACUUM EXTRACTOR, 72".
1 Hunter 26B FULLING MILL, Chain Drive.
2 Enclosed S.S. KETTLES, 10' and 12'.
1 Fletcher EXTRACTOR, S.S. Basket 20".
1 C&M FOLDER, 70", 1 yard.
1 C&M INSPECTING AND MEASURING MACHINE, 96".
12 C&K W3 LOOMS, 82", Auto., Motorized.
23 C&K W2 LOOMS, 82", Auto., Motorized.
18 C&K LOOMS, 92", Auto., Motorized.
2 Gessner D.A. NAPPERS, 72".
1 PADDER, 2 roll, 73½", hydraulically operated.
1 Davidson High Speed SHEAR, 3 blade, 66½".
1 Terrell Model L BOBBIN STRIPPER.
1 Scott Cloth TESTER, Model "Q".
1 B.C. WARP TYING MACHINE, 8E.
1 Schweiter BOBBIN WINDER, 21 spindles.
1 Van Vlaan. TENTER FRAME, 20' x 57".

EXCEPTIONAL VALUE MACHINERY WHICH HAS OPERATED LESS THAN 40 HOURS IN A TEXTILE SCHOOL — ORIGINALLY INSTALLED NEW.

1 Textile AGER 50", Brass Rolls.
1 Textile PRINT MACHINE, 4 Color, 40".
1 Textile CALENDER, 3 Roll, 44".
1 Saco-Lowell COTTON CARD, 40".
1 Whitin SLIVER LAPPER, 20 End.
1 Whitin RIBBON LAPPER.
1 Whitin COMBER, 8 Head.
1 Saco-Lowell DRAWING FRAME, Single Head.
1 Saco-Lowell SLUBBER, 40 spindles, 10"x5".
1 Saco-Lowell ROVING FRAME, 72 spindles, 8" x 4".
1 Saco-Lowell SPINNING FRAME, 48 spindles, 3¼" gauge.
1 Saco-Lowell TWISTER, 80 spindles, 3" gauge.
1 E. & B. SPOOLER, 60 spindles, 4½" gauge.
1 Foster WINDER, Skein to Cone, 20 Spools.
1 Atwood Single Deck UPTWISTER, 32 spindles.
1 Atwood Single Deck DOWN TWISTER, 28 spindles.
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(Continued from page 236)

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6—Whitin Ring Twisters, Model BB, 4-½" gauge, 3" dia. rings, 160 spindles each, individually motor driven. 1948 Model.

8—Whitin Ring Twisters, Model BB, 4-½" gauge, 3" dia. rings, 160 spindles each, individually motor driven.

630—Spindles Whitin-Schweiter Automatic Filling Winders, Model MS, with Kiddie and Disc Tensions, each 21 Spindle Unit individually motor driven. 21 Spindles equipped with latest automatic bobbin loader.

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1—Uxbridge Gentle Air Slasher, Model A, equipped with 84" headway, taking beams 28" dia., West Point Foundry & Machine Co., stainless steel size box, pneumatic pressure rolls. Unit complete with temperature controls and size level controls, also stretch control. Installed 1949.

1—Johnson 7-Can Slasher, stainless steel cans 30" dia. x 60" face, headway 66" x 30" dia., equipped with stainless steel size box, complete with controls. Motor driven. Installed 1949.

24—Atwood Utility Uptwisters, 200 spindles each, 6-½" gauge, capacity 12 oz., individually motor driven. Purchased 1951.

1—Atwood Model 10 Ring Twister, 100 spindles, 7" gauge, 4-¾" self-oiling rings, 10 step steel creel with disc quill tensions, finger tip control. Motor driven. 1951 Model.

2—Abbott Automatic Quillers, 100 spindles each, with automatic loader, automatic pin board doffer, cycle changer, individually motor driven spindles.

40—Draper Model XD Looms, 54" reed space, 49" sand roll, 20-harness dobbies, individually motor driven. 1946 Looms.

81—Draper Model XD Looms, 54" reed space, 49" sand roll, 20-harness dobbies, individually motor driven. 1949 Looms.

40—Draper Model XD 50" Looms, 57-½" reed space, 53" sand roll, spring tops, 6 harness cams, with Diehl transmitters. Individually motor driven. 1951 Looms.

120—Draper Model XD 50" Looms, 58" reed space, 53" sand roll, 20-harness dobbies, individually motor driven. 1948 Looms.

60—Draper Model XD Looms, 73" reed space, 68" sand roll, double end cams, 6 harness, auxiliary shafts, individually motor driven. 1945 Looms.

6—Draper Model XD Looms, 81-½" reed space, 76" sand roll. 20-harness gem heads, individually motor driven. New, never operated.

36—Crompton & Knowles Model W3 4x1 Box Looms, 76" reed space, 71" sand roll, 70" cloth, 25-harness gem heads, individually motor driven. 1948 Looms.

1—Barber-Colman Model LL Portable Knot Tying-In Machine, 56" wide, motor driven, Figure 8 Knotter, 1951 Model.

1—Barber-Colman Model LS Portable Knot Tying-In Machine, 56" wide, motor driven, Figure 8 Knotter.

1—David Gessner 72" Versamatic Semi-Decator, 36" dia. cylinder, 1952 Model.

2—David Gessner 80" 18 Roll Double Acting Nappers, driven in tandem. Motor driven, 1950 Model.

1—66" Parks & Woolson Davidson 2-Blade Shear, individually motor driven shearing blades. 1949 Model.

4—70" Birch Bros. Power Perches, steel construction, individually motor driven. 1949 and 1950 Models.

1—84" Riggs & Lombard 18 Pass Vertical Pin Tenter Dryer, return type, individually motor driven fans, complete with controls, etc.

1—James Hunter 18' Stainless Steel Dye Kettle, totally enclosed, 48 separators, 48" dia. stainless steel reel, motor driven. Purchased 1950.

1—Rodney Hunt 9' Stainless Steel Dye Kettle, 18 string, 36" dia. hump reel, motor driven.

4—Rodney Hunt 8' Stainless Steel Dye Kettles, totally enclosed, 16 string, 48" dia. stainless steel reel, motor driven. Purchased 1946 and 1948.

1—Rodney Hunt 4' Stainless Steel Dye Kettle, totally enclosed, 6 strings, 36" dia. stainless steel hump reel, motor driven. Purchased 1950.

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B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
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P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting and Winding Equipment and Supplies.

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Unibal SWEEP STICKS

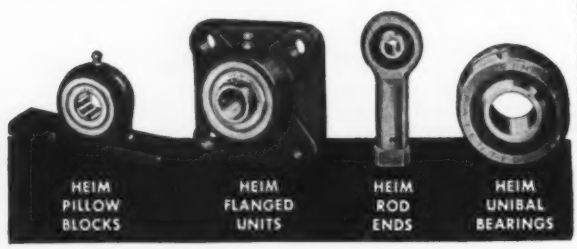
This Heim Unibal Spherical Bearing is assembled as an integral part of the sweepstick. It corrects any misalignment at the stud.

Looking at this cutaway view of the bearing, we see how the single ball oscillates in bronze bearing races to give longer life & smoother operation.

The body of the Heim sweepstick is made of heavy cotton fabric bonded in rubber. A long wearing, self aligning Unibal bearing protects the stick from wearing egg shaped at the stud. The result is smoother pick action and longer life.

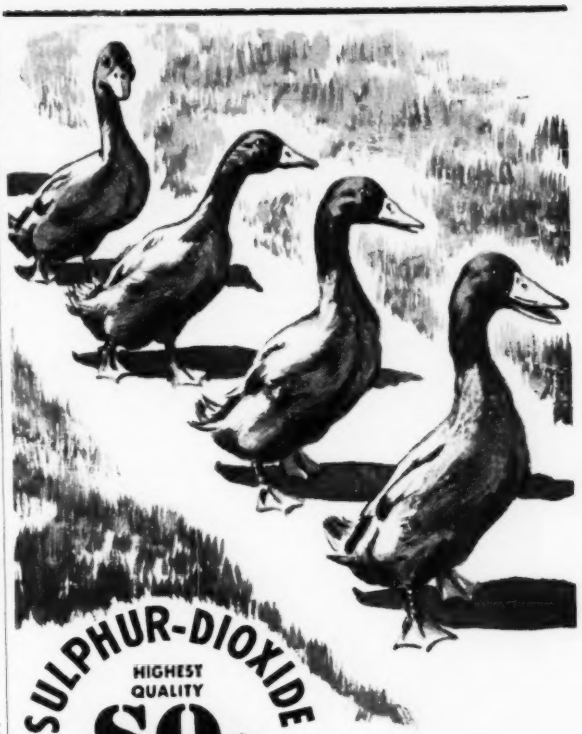
Please write for list of sizes and prices — or a sample for testing if you would like.

THE **HEIM** COMPANY
FAIRFIELD, CONNECTICUT



Clark Equipment Co., Industrial Truck Div.	33	P
Clipper Belt Lacer Co.	233	Q
Cole Mfg. Co., R. D.	202	B E
Colgate-Palmolive Co.	6	C
Colson Corp.	198	P
Corn Products Refining Co.	61	C
Courtaulds, Inc.	169	G
Crane Co.	66	H
Crane Mfg. Co.	210	L
Crompton & Knowles Loom Wks.	13	R
Crown Engineering & Sales Co.	235	K
Crucible Steel Co.	48	O
Curtis & Marble Machine Co.	198	E
Cyclone Fence Dept., American Steel & Wire Div., U. S. Steel Corp.	184	B
Dary Ring Traveler Co.	214	T
Deutscher, Spinnereimaschinenbau Ingolstadt	39	T
Diehl Mfg. Co.	65	F Q
Dixon Corp.	21	T
Dobeckmun Co., The	181	G
Dodge Mfg. Corp.	68	Q
Dolge Co., C. B.	208	B
Draper Corporation	1, 133	R
duPont de Nemours & Co., E. I.		
Dyestuff Dept.	135	C
Electrochemical Dept.	205	C
Plastic Div.	53-54	O
Economy Baler Co.	233	P
Eisenberg Fibers, Inc.	234	G
Emerson Apparatus Co.	209	K
Emery Industries, Inc.	59	C
Felters Co., The	164	L RT
Foster Machine Co.	32	T
Foxboro Co., The	60	K
Franklin Process Co.	35	G
Gair Co., Inc., Robert	41	P
Gardner-Denver Co.	20	H
Gaylord Container Corp.	179	P
Geigy Chemical Corp., Dyestuff Div.	2	C
Gemar Associates	232	N
General Dyestuff Co.	193	C
General Tire & Rubber Co. Industrial Products Div.	207	L RT
Gessner Co., David	223	E
Glasco Equipment Corp.	176	E
Globe Dye Works Co.	182	G
Goldberg, J. B.	232	N
Goodrich Chemical Co., B. F.	38	C
Graphite Metallizing Corp.	216	O Q
Gulf Oil Corp.	55	M
Harwood & Son, G. S.	208	T
Haskell-Dawes Machine Co., Inc.	209	T
Heim Co., The	244	R
Heineman Corp., O., Div. of Aetna Industrial Corp.	232	G
Hinnekens Mach. Co., Inc.	217	E
Hubinger Co., The	158	C
Huyck & Sons, F. C.	228	E
Hyatt Bearings Div., General Motors Corp.	157	O Q
Industrie-Werke-Karlsruhe	246	E
Ingersoll-Rand Co.	19	H
Ives Co., L. T.	220	L
Jenkins Sons Inc., M. W.	161	E
Jiffy Textile Marker Co.	231	E L R
Johns-Manville	64	O

Keever Starch Co.	165	C
Kenwood Mills, Noone Industrial Fabrics Div.	228	E
Kidde & Co., Inc., Walter	215	RT
Kuljian Corp., The	235	N
Laurel Soap Mfg. Co.	196	C
Lawlor Co., S. C.	218	D
Lazenby Co., F. A., The	210	T
Link-Belt Co.	7	Q
Livermore Corp.	211	R
Loper Co., Ralph E.	231	N
Lowell Shuttle Co.	192	RT
Main, Inc., Chas. T.	234	N
Manhattan Rubber Div.	50	Q
Manton-Gaulin Mfg. Co., Inc.	173	R
Marshall & Williams Corp.	207	E
Meese, Inc.	225	P
Micro Switch Div.	191	F
Milton Machine Wks., Inc.	208	R
Minneapolis-Honeywell Reg. Co. Industrial Div.	8-9	K
Micro Switch Div.	191	F
Moisture Register Co.	206	K
Monsanto Chemical Co., Inorganic Chem. Div.	139	C
Textile Chemicals Div.	51	C
Morton Salt Co.	185	C
Muller, Franz	18	E
National Aniline Div., Allied Chem. & Dye Corp.	17	C
National Ring Traveler Co.	52	T
Naugatuck Chemical Div., U. S. Rubber Co.	183	C
New Departure Div. of General Motors Corp.	15	O Q
Nopco Chemical Co.	24	C
Oakite Products, Inc.	243	C
Onyx Oil & Chemical Co.	69	C
Oronite Chemical Co.	203	C
Orr & Sembower, Inc.	144	Q
Pabst Brewing Co.	222	C
Page Fence Association	202	B
Parks & Woolson Machine Co.	196	E
Perfecting Service Co.	204	H
Perkins & Son, B. F.	194	E
Permutit Co.	223	B
Pittsburgh Corning Corp.	171	B
Precision Gear & Mach. Co.	226	Q
Procter & Gamble	201	C
Proctor & Schwartz, Inc.	180	E T
Raybestos-Manhattan, Inc. Manhattan Rubber Div.	50	Q
Red-Ray Mfg. Co.	228	E
Reeves Pulley Co.	172	Q
Reliance Electric & Engineering Co.	12	F
Rhoads & Sons, J. E.	5	R
Ridge Tool Co.	168	H
Riggs & Lombard, Inc.	36	E
Robert & Co., Associates	2nd Cover	N
Rohm & Haas Co.	175	C
Rome Soap Mfg. Co.	233	C
Ryerson & Son Inc., J. T.	122	O
Saco-Lowell Shops	14	T
Sandoz Chemical Wks.	43	C
Sarco Co., Inc.	189	H
Sargent's Sons Corp., C. G.	178	E
Schlafhorst & Co., W.	11	RT
Schweiter Ltd.	30	T



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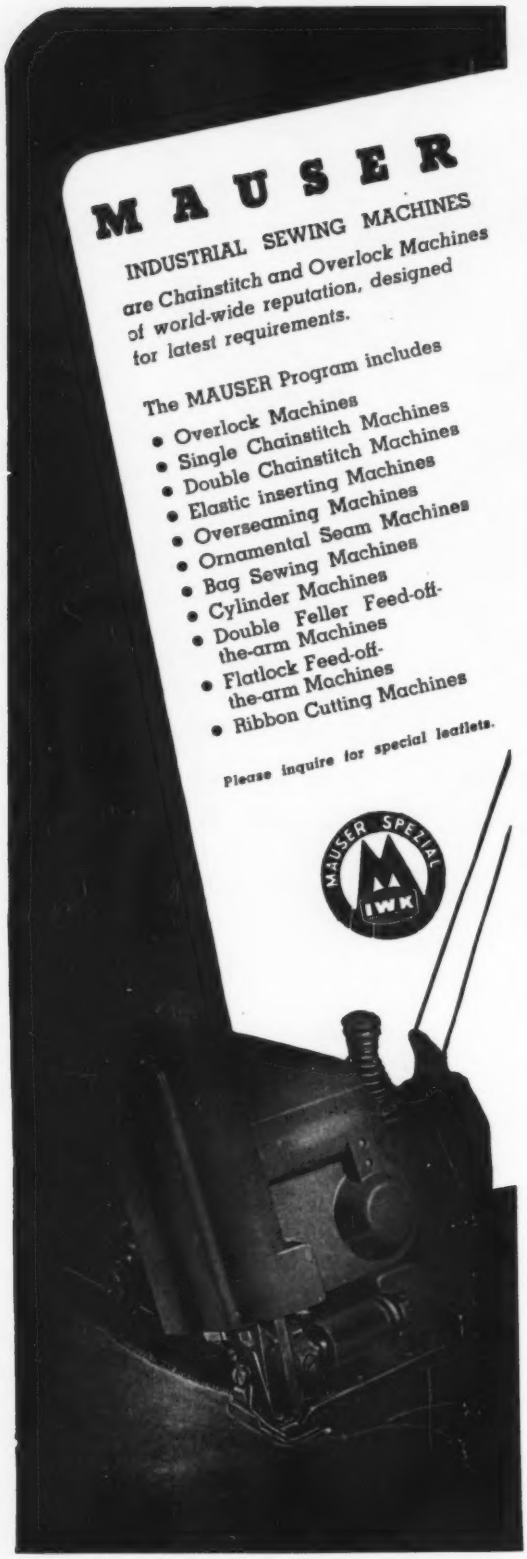

Sinclair Refining Co.	40	M
SKF Industries, Inc.	58	O, Q
Societe Alsacienne De Constructions Mecaniques	124	T
Socony-Vacuum Oil Co., Inc.	49	C
Solvay Process Div., Allied Chem. & Dye Corp.	212	C
Sonoco Products Co.	29	E, T
Southern Shuttles Div. Steel Heddle Mfg. Co.	167	R
Standard Pressed Steel Co.	234	O
Stanley Works, The	195	K
Steel Heddle Mfg. Co.	167	R
Stewart Iron Works., Co., Inc.	209	B
Stop-Motion Devices Corp.	225	L
Stowe-Woodward, Inc.	31	E
Superior Combustion Industries, Inc.	233	Q
Swift & Co., Industrial Soap Dept.	143	C
Taylor Instrument Cos.	62	K
Tennessee Corp.	245	C
Toledo Pipe Threading Mach. Co.	210	H
Tompkins Bros. Co.	200	L
Torrington Co., The (Needles)	137	L
Turbo Machine Co.	70	T
Unionmatex, Textilmaschinen-Union, G.M.B.T.	37	E, RT
U. S. Rubber Co., Naugatuck Chemical Div.	183	C
U. S. Steel Export Co.	184	B
Universal Winding Co.	16, 46	T
Veeder-Root, Inc.	4th Cover	K
Versenes Chemical Co., Inc.	224	C
Visking Corp., The	67	P
Warner & Swasey Co.	25	T
Western Felt Works	213	L, RT
Westinghouse Electric Corp., Micarta Div.	44-45	O
Whitin Machine Works	22-23	T
Wildman Mfg. Co.	187	L
Winsor & Jerauld Mfg. Co., Inc.	128	E
Wolf & Co., Jacques	199	C
Wood's Sons Co., T. B.	190	Q
Wright Machinery Co.	231	K

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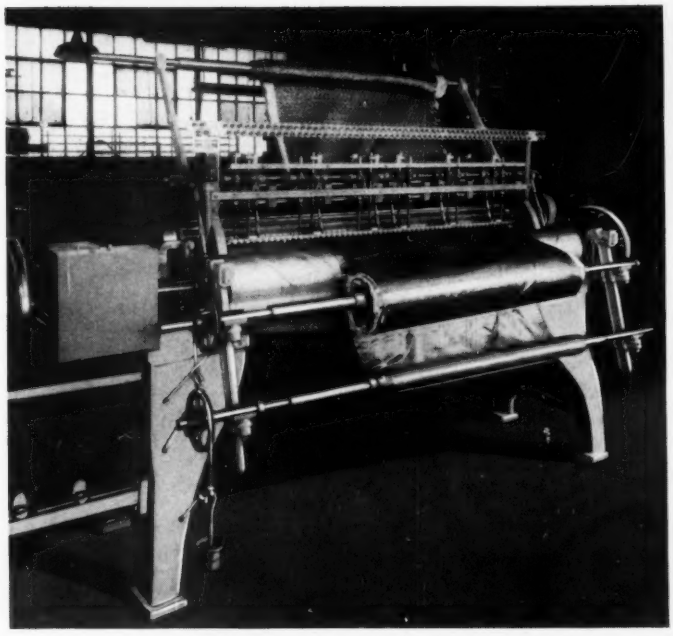
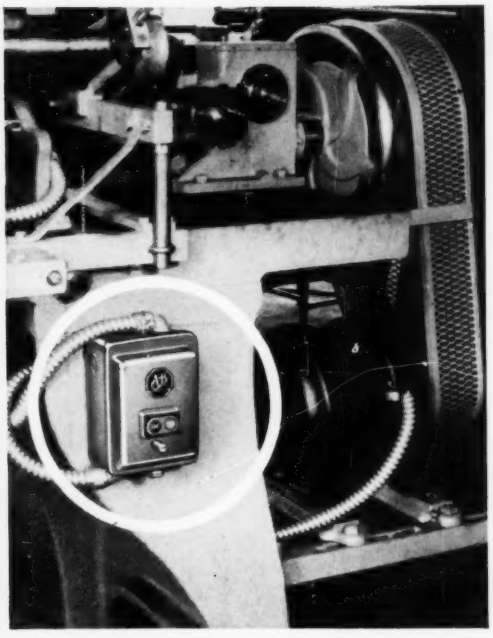




Multi-needle quilting machine, manufactured by Pathe Tool Manufacturing Company of Long Island, New York. View on right shows close-up of the Bulletin 709 Solenoid Starter with push button in the cover.

Pathe Multi-Needle Quilting Machine

● Eliminate operating worries and maintenance costs by installing Allen-Bradley solenoid starters. These starters have only ONE moving part. Such simplicity of design is a reliable assurance of millions of trouble free operations.

Also, all Allen-Bradley controls are equipped with double break, silver alloy contacts which require no maintenance whatsoever. You can install Allen-Bradley controls and forget them. Two solder-type relays provide dependable motor overload protection.

You can use Allen-Bradley control to your advantage in your mill! Write for new 120-page Handy Catalog.

Allen-Bradley Co.
120 W. Greenfield Ave., Milwaukee 4, Wis.
In Canada—Allen-Bradley Canada Limited, Galt, Ont.

operated by

Allen-Bradley

trouble-free

motor control

BULLETIN 709 AUTOMATIC MOTOR CONTROL

Allen-Bradley Bulletin 709, Form 1 Starters have a "Start-Stop" push button, operated through the cover, thus eliminating the wiring necessary when a separate push button station is used. The Form 2 Starters are with plain cover, making the starter suitable for use with either 2 or 3-wire pilot control operation. Form 3 Starters are equipped with a "Hand-Off-Auto" selector switch in cover.

ALLEN-BRADLEY

QUALITY

MOTOR CONTROLS FOR TEXTILE MILLS

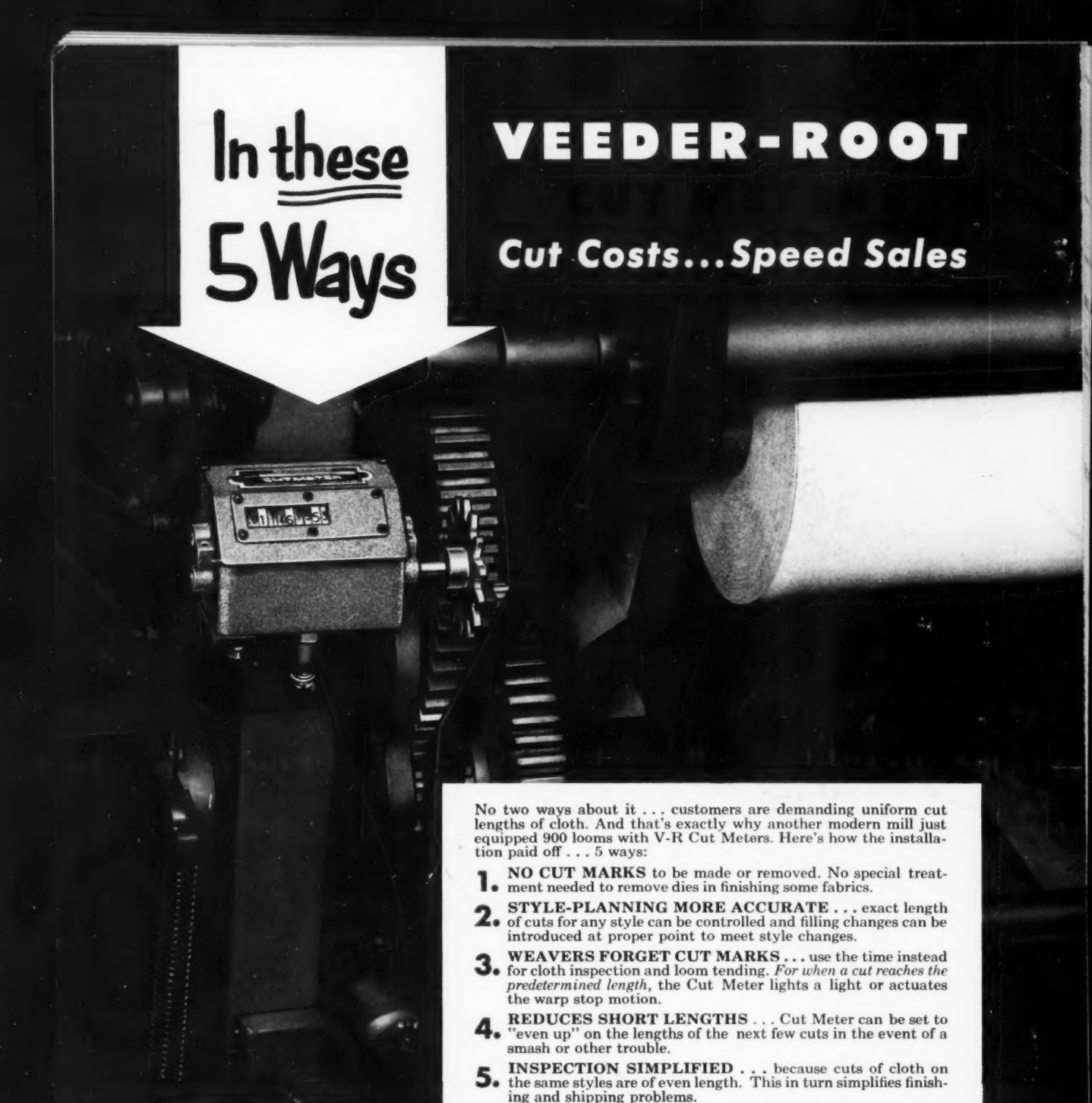
THE SIGN OF QUALITY IN MOTOR CONTROL

A-B Quality

In these 5 Ways

VEEDER-ROOT

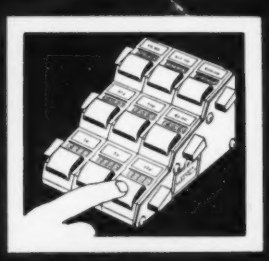
Cut Costs...Speed Sales



No two ways about it . . . customers are demanding uniform cut lengths of cloth. And that's exactly why another modern mill just equipped 900 looms with V-R Cut Meters. Here's how the installation paid off . . . 5 ways:

1. **NO CUT MARKS** to be made or removed. No special treatment needed to remove dies in finishing some fabrics.
2. **STYLE-PLANNING MORE ACCURATE . . .** exact length of cuts for any style can be controlled and filling changes can be introduced at proper point to meet style changes.
3. **WEAVERS FORGET CUT MARKS . . .** use the time instead for cloth inspection and loom tending. *For when a cut reaches the predetermined length,* the Cut Meter lights a light or actuates the warp stop motion.
4. **REDUCES SHORT LENGTHS** . . . Cut Meter can be set to "even up" on the lengths of the next few cuts in the event of a smash or other trouble.
5. **INSPECTION SIMPLIFIED . . .** because cuts of cloth on the same styles are of even length. This in turn simplifies finishing and shipping problems.

Customers can be *sure* they'll get uniform cut lengths from mills equipped with Veeder-Root Cut Meters. And that's why more and more mills are giving their customers this assurance which speeds sales. How about *your* mill? Just get in touch with the nearest Veeder-Root office.



VEEDER-ROOT